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ORIGINAL ARTICLES.

A STUDY OF SIXTEEN HUNDRED AND FIFTY BLOOD EXAMINATIONS FOR THE WIDAL REACTION WITH SPECIAL REFERENCE TO SO-CALLED PARTIAL REACTIONS.[1]

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IN presenting this paper for consideration I wish first to direct attention to the fact that the examinations have all been made by one person, and that they have all been restricted to a certain rule, *i.e.*, certain phenomena must be present in every examination to constitute it a reaction, thereby reducing the personal equation to the very lowest degree. In commencing the examination of suspected typhoid bloods I had made for my use a book so ruled as to give a column each for these phenomena: (1) Effect on motility; (2) effect on the integrity of the individual organisms; (3) the amount of dirt and detritus in the hanging drop; (4) the number of bacilli near the edge of the drop; (5) the number, character and location of the clumps; (6) the dilution.

The culture was examined immediately upon being mixed with the suspected blood and to each column in the book was added a note on the conditions ascribed to it.

The examinations were made at frequent intervals, the phenomena being noted each time. It was not until after I had made several hundred examinations that I was struck with the number of bloods showing practically the same phenomena (where there was marked effect on the motility and decided clumping of a peculiar kind), and that I commenced the study of these bloods with the idea of later submitting them for consideration.

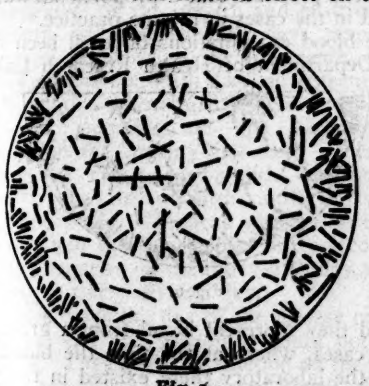

Fig. 1.

To the end that one may thoroughly understand what is meant by the term "Widal reaction" in this paper, I have had drawings made of microscopical fields of the typhoid bacilli in bouillon cultures, both before and after the addition of typhoid blood, and also after the addition of blood from a case of another febrile condition, where there has been a so-called partial reaction.

In making the hanging drop to be examined it is necessary to have it of such depth that it will show at least three focal planes, otherwise the examination will be incomplete and unsatisfactory.

Fig. 1 shows a microscopical field of the top of a hanging drop of a normal bouillon culture of typhoid bacilli. This culture is twenty hours old and the organisms are freely motile. This represents the control drop used for comparison with the drop of the same culture to which has been added a little of the blood of a person suspected to have typhoid fever. Note these points in Fig. 1; the organisms are evenly distributed throughout the field except at the edge of the drop where they are gathered in great numbers; they show great activity here, seemingly trying to crowd to the very edge. This attraction is probably due to the action exerted on the organisms by the oxygen in the air, which naturally exerts positive chemotaxis on all aerobic organisms.

Fig. 2.

Fig. 2 shows a cross section of the drop represented in Fig. 1, and you will notice that the bacilli are evenly distributed throughout the drop, except at one place in the focal plane *a* and again in the focal plane *c*. It sometimes happens that there is something adhering to a supposedly clean cover-glass which attracts the bacilli to that point where they appear as fairly well defined clumps, more or less like the true clumps due to the agglutinating substance in typhoid blood. The increase in organisms at the bottom of the drop in the focal plane *c* is easily accounted for by the fact that gravity naturally carries the dead and non-motile organisms to the bottom, these frequently assuming the character of clumps.

If you can find a field in any focal plane of the hanging drop free from clumps, you can be quite sure that any clumping present is not due to any

[1] Read before the Society of Alumni of Bellevue Hospital.

agglutinating substance which necessarily will affect organisms in every focal plane.

Fig. 3 shows the microscopal appearance of the top of a drop where the Widal reaction is present. Notice first that the organisms have been drawn together in groups and that the individuals of each group appear to be loosely held together. Viewed under the microscope these clumps are practically quiescent there being very

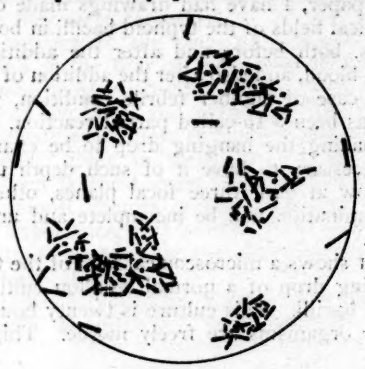

Fig. 3.

little movement, either of the individual organisms or of the clump as a whole. The edge of the drop is practically free from organisms, showing that the air no longer exerts any influence on them.

Fig. 4 shows a cross section of the hanging drop shown in Fig. 3; you will notice that the clumps are evenly distributed throughout the drop, with perhaps some increase in the numbers and compactness of the clumps at the bottom.

Fig. 5 shows the microscopal appearance of the

Fig. 4.

top of a hanging drop of a bouillon culture to which has been added some blood of a patient suffering from a febrile condition not caused by typhoid infection, but which exerts a marked influence on the typhoid organisms. You will notice that there are many organisms at the edge of the drop. The air exerts the same influence on the bacilli that it did before the addition of the blood. Note the character of the clumps, generally compact at the center with the bacilli at the edge of the clump usually attached by one end only.

Very frequently these clumps have the appearance of being built up around a piece of detritus present in the drop. All the organisms comprising the clump seem to have retained part, at least, of their motility, those on the edges being particularly motile so far as their free ends are concerned. When motility is very much inhibited, these clumps have a peculiar trembling movement, which is like the molecular movement described as Brownian.

Fig. 6 shows a cross section of the drop represented in Fig. 5; note the same character of the clumps in every focal plane. The large number of motile bacilli and the number attracted to the edge of the drop by the air. The appearance of the drop shown in Figs. 3 and 4 is what has been taken to constitute a Widal reaction in this study and when any of the characters there shown have been absent, the blood has been classed as not giving it.

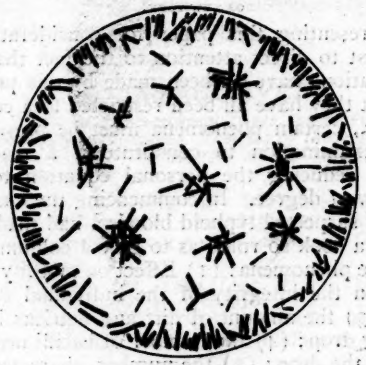

Fig. 5.

In this study I have had access to the records of all the Hospital cases, and have carefully looked over the history of every one. In the cases in private practice, those giving a partial reaction only have been studied; 1,003 of the cases occurred in hospitals and 647 occurred in private practice. The 117 cases referred to later in this paper which had typhoid fever and in which no reaction occurred were all hospital cases. It is probable that a proportional number occurred in the cases in private practice.

These blood examinations have all been made in the Department of Health Research Labora-

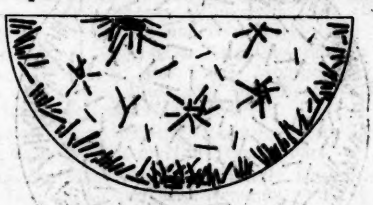

Fig. 6.

tory and they represent blood from a great variety of cases, where at the time the blood was sent to the laboratory there existed in the mind of the medical attendant a doubt as to what the disease might prove to be. Naturally most of them were sent, comparatively early in the disease, so that failure to get reactions in the typhoid cases is not to be wondered at.

The blood of a patient in most instances was

sent only once, I suppose either because the symptoms were so pronounced that it was not thought necessary to have the blood again examined, or the case proved to be typhoid. This was unfortunate so far as laboratory results were concerned, for it leaves our work but half completed. If the physician would only looked past his own immediate interest to that of the profession at large such studies as this one could be made of far greater value because they would show the complete statistics. Most of these cases, so far as I can ascertain, were only suspicious of typhoid at the time the blood was sent and this reason, combined with the early day in the disease where typhoid infection did exist, accounts for the comparatively few Widal reactions.

Of the bloods examined 265 gave the Widal reaction. Forty-six were sent on or before the seventh day of the disease; 36 from the eighth to the tenth inclusive; 50 from the eleventh to the fourteenth day inclusive; 28 from the fifteenth to the twenty-first day inclusive; 7 from the twenty-second to the twenty-eighth day inclusive; 5 from the twenty-ninth to the thirty-eight day inclusive and in 93 the day of disease was not mentioned. In 34 cases the Widal reaction occurred upon the second examination of the blood, of these, 2 were negative on the third day and positive on the eighth and tenth days respectively; one negative on the fifth day and positive on the thirteenth day; one was negative on the sixth day and positive on the ninth day; 8 were negative on the seventh day and positive on the eighth, ninth, tenth, thirteenth (2), fifteenth (2), and seventeenth days respectively. One was negative on the eighth and positive on eleventh day. One was negative on the ninth and positive on the sixteenth day. Five were negative on the tenth and positive on the eleventh, twelfth, thirteenth, fourteenth and twenty-fourth days respectively. One was negative on the eleventh and positive on the fifteenth day. Two were negative on the twelfth and positive on the fourteenth and twenty-sixth days respectively. Five were negative on the fourteenth day and positive on the sixteenth (2), seventeenth, nineteenth and thirty-third days respectively. One was negative on the sixteenth and positive on the twenty-first day. Two were negative on the twenty-eighth day and positive on the thirty-fourth and thirty-eighth days respectively. One was negative on the thirtieth day and positive on the thirty-second day. One was negative on the thirty-fifth day and positive on the thirty-seventh day.

In three cases the day of the disease on which the blood was first examined could not be ascertained. They gave the reaction on the twenty-sixth, sixty-fourth and eighty-fourth days respectively. In all of these late cases it is probable that the reaction would have been noted earlier had the blood been sent at frequent intervals after the first examination.

The Widal reaction was found in 8 cases that were not diagnosed typhoid and which gave no history of a previous typhoid infection. Three were malaria; of these, two were soldiers from a typhoid-infected camp and one had had a continued fever two years before. One was a case of diarrhea, no other diagnosis; this case was discharged improved after having been in the hospital nine days, this also was a soldier from a camp where typhoid infection was common. One was a case of puerperal fever complicated with phthisis. At the autopsy of this case tuberculous ulcers were found in the small intestine. There was one case of cerebral hemorrhage where there was no history and no autopsy. There was one case of chronic endocarditis and one case of splenic infarction with rupture.

I think that all of these eight cases speak pretty well for themselves, without my making any comment upon them further than to say that the possibility for error of diagnosis in all such cases is very great. There were 1,115 bloods examined that did not react at all, of these 117 proved to be typhoid. The blood was only sent to the laboratory one time. Forty-one specimens of blood were sent from the fourth to the seventh day of the disease, inclusive—fourth, 12; fifth, 13; sixth, 4; seventh, 12; 22 from the eighth to the tenth day, inclusive—eighth, 18; ninth, 8; tenth, 6; 23 from the eleventh to the fifteenth day, inclusive—eleventh, 14; twelfth, 2; fourteenth, 2; fifteenth, 5; 18 from the sixteenth to the twenty-first day, inclusive—sixteenth, 6; seventeenth, 2; eighteenth, 1; nineteenth, 2; twentieth, 3; twenty-first, 4; 3 from the twenty-second to the thirty-seventh day, inclusive—thirtieth, 2; thirty-seventh (1), and there were ten that were not dated, so the day of disease could not be found. Of the typhoid cases where blood was sent for examination only once and no reaction obtained, 35 per cent. were sent before the end of the seventh day of disease; 38 per cent. after the seventh day and before the end of the fifteenth day of disease, and 27 per cent. after the fifteenth day of the disease, all but three of these being sent during the third week of illness.

There were 160 cases that did not give a typical reaction, but that did give a partial reaction to such a marked extent as to lead me to believe that these reactions might possibly be due to the agglutinating substance of typhoid. The clumps, while differing from those that are found in a Widal reaction, were present in every field and were well defined, but the fact that they were usually made up of more or less motile organisms, and that the edge of the drop was never free from organisms, caused them to be classed as not Widal reactions.

I have analyzed these cases as carefully as possible where access could be had to the records of them and find that they naturally fall into two classes, those occurring in hospitals and those occurring in private practice. There were 37 cases that occurred in private practice, of these 20 were called typhoid and were divided as follows: One walking case, 2 mild cases, 1 abortive case, 15 ordinary cases, and 1 protracted case.

Thirteen cases were not typhoid, divided as follows: 3 where no diagnosis was made, 3 intermittent fever, 1 fecal impaction, 1 la grippe, 1 colitis, 1 acute indigestion, and 1 enteritis. In four instances no response was received to the letter of inquiry sent out.

Of the 123 hospital cases there were 56 where no records were kept of the cases, but from the fact that the histories of typhoid-fever cases have been apparently well kept in all the hospitals visited, I think that it is safe to assume that most, if not all of these 56 were not typhoid. Of the remaining 67 cases where records were kept, 8 were typhoid fever, 15 were not diagnosed, 10 were tuberculosis, 16 were malaria, 4 were bronchitis, 4 pneumonia, 1 pleurisy with effusion, 1 nephritis, 2 anemia, 1 pericarditis, 1 gonorrhea and 1 submersion.

In private practice 54 per cent. of the partial reactions occurred in typhoid infections while in hospitals 6.5 per cent. only occurred in typhoid infections. It seems to me that it is not improbable that some of the cases in private practice were continued fevers other than typhoid.

I shall base my conclusions, so far as the partial reactions are concerned, on the hospital cases where fairly-accurate histories were kept. No attempt has been made in this study to find out how often the Widal reaction occurs in typhoid fever; that point has been pretty well determined and it is generally conceded, I think, to be about 95 per cent. of all cases. Had all the physicians sending blood to the Health Department Laboratory been as much interested in the scientific side of the investigation as they were in the clinical, our statistics would be much more valuable.

In this study, of those giving positive reactions 33 per cent. occurred in the first week; 84 per cent. before the end of the second week; 16 per cent. in the third week and 4 per cent. in the fourth week. The fact that so large a percentage occurred as early in the disease as the second week would tend to show that the examination of the blood, so far as these cases were concerned, has been of material value to the physician in charge. Where the reaction occurred upon the second examination of the blood, 56 per cent. were found before the end of the second week; it is highly probable that this percentage would have been much larger had another specimen of blood been sent back promptly upon receipt of the result of the laboratory examination of the first specimen. Of the typhoid bloods where no reaction was obtained all but 27 per cent. were sent before the sixteenth day of the disease, and there is no reason to believe that the reactions would have been absent had second specimens been sent for examination during the second and third weeks. Less than 7 per cent. of the partial reactions were found in typhoid infections in the hospital cases. These partial reactions occurred with greater frequency in both tuberculosis and malaria than they did in typhoid. They were found in thirteen different conditions, and I have no doubt that, if blood was sent from a general medical ward and from febrile cases, this list would be greatly augmented.

The value of the partial reaction to the clinician is absolutely *nil*, I think, except in so far as it has occurred in a few typhoid cases it would be an indication to send another specimen of blood for examination. In the bloods where the Widal reaction occurred on the second examination there were only two where the partial reaction was present on the first examination. There is no reason to believe that this partial reaction would have not been present had the patient been suffering from any of the diseases enumerated above, instead of a typhoid infection.

In summing up the results of this study, it seems to me that they can be embraced in these two sentences: First, that these cases where the Widal reaction has been present are only further evidences of the already-known practical value of the reaction. Second, that the so-called partial reactions are valueless so far as the clinician is concerned.

A NEW METHOD OF DETERMINING APPROXIMATELY THE AMOUNT OF HYDROCHLORIC ACID IN THE GASTRIC CONTENTS.*

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THE usual method of titrating with phenolphthalein and one-tenth normal sodium hydrate solution for determining the total acidity, and with Toepfer's solution for the free HCl, requires a certain amount of stomach-contents (about 10 cc.). When we have to deal, however, with very small quantities neither of these two methods is practicable. The amount of contents obtained by the examination with the stomach-bucket is always so small that we cannot very well filter and titrate it.

It was Günzburg[1] who first tried to estimate approximately the quantity of HCl by another method than titration. For this purpose he made use of his well-known phloroglucin-vanillin reaction, determining how many times the stomach-contents could be diluted with water before the reaction disappeared. Until recently I always employed this method in cases in which there was only a small amount of gastric contents at hand. Günzburg's test, namely, evaporating a drop of gastric contents mixed with a drop of Günzburg's reagent in a porcelain dish over a spirit-lamp, is somewhat complicated and lengthy, particularly as the same procedure must be repeated after each dilution.

I have lately made use of a somewhat more simple method which in exactness I believe to be equal to that of Günzburg. For this purpose I employ the solution of dimethylamido-azo-benzol recommended by Toepfer. I do

* Read before the German Medical Society of New York.

[1] Günzburg. Centralblatt f. klin. Med., 1887, No. 40.

not, however, make use of the solution directly, but of filter paper, saturated with it[2] (similar to Congo paper).

The procedure is as follows: A minute quantity of stomach-contents is placed by means of a glass rod upon a strip of dimethylamido-azo-benzol paper (one-half by eight centimeters). If the paper turns red one drop of the contents is diluted with two drops of water in a small porcelain dish. A glass rod is dipped into the mixture and the test paper again touched. If it still turns red, one or two more drops of water are added and the procedure repeated as before. This is done until only a slightly red or almost no red color is produced by the mixture upon the test paper. In this way the amount of dilution required for a trace reaction with the test paper is determined. It is clear that the more HCl there is in the stomach-contents the more they can be diluted, still giving a trace reaction with the dimethyl-amido-azo-benzol paper.

In order to determine the clinical value of this method I have examined the gastric contents of 21 patients (about one to one and one-half hours after a test breakfast) according to the usual titration method and also by means of dilution and testing with the dimethylamido-azo-benzol paper. The results are given in the accompanying table.

TABLE COMPARING THE DETERMINATION OF HYDROCHLORIC ACID IN STOMACH-CONTENTS BY MEANS OF THE USUAL TITRATION METHOD AND BY MEANS OF DILUTION AND TESTING WITH DIMETHYLAMIDO-AZO-BENZOL PAPER.

No.	Name	Date	Titration Methods		Dilution and Paper Method
			Total acidity	Free HCl	
1	H. G.	3, 8, '01	36	24	3+trace.
2	M.	3, 5, '01	50	30	3+tr.
3	J. P.	4, 2, '01	52	32	4+, 6 tr.
4	B. N.	5, 13, '01	52	32	4 tr.
5	M. M.	5, 12, '01	60	44	3+, 5 tr.
6	R. S. S.	3, 6, '01	60	40	4+ strong, 8+, 10+faint, 12 tr.
7	D.	3, 2, '01	64	32	3 tr.
8	M. N.	5, 27, '01	68	48	3+f., 5+f., 6 tr.
9	H. B.	2, 28, '01	72	54	5+, 7 tr.
10	O. P.	5, 22, '01	80	60	4+, 7+f., 9 tr.
11	S.	5, 22, '01	80	60	4+, 6+, 8 tr.
12	C. A. H.	5, 11, '01	80	56	4+, 6+f., 8 tr.
13	M.	4, 29, '01	80	60	5+, 8+, 10+f., 12 tr.
14	E. D. B.	4, 25, '01	86	72	6+st., 10+st, 13+, 15+. 18 tr.
15	S. L.	3, 17, '01	88	70	10+, 12+f., 14 tr.
16	P.	3, 27, '01	88	72	5+, 7+, 9+, 12 tr.
17	H. P. H.	4, 4, '01	92	74	6+, 8 tr.
18	H. K.	5, 7, '01	96	80	5+, 9+, 14 tr.
19	J. N.	3, 20, '01	96	76	4+st., 8+, 12 tr.
20	J. A. W.	5, 9, '01	100	80	5+, 8 tr.
21	S.	3, 2, '01	100	80	8+st., 12 tr.

Before considering the table, I would like to remark that I have excluded from this comparative investigation all cases in which the addition of dimethylamido-azo-benzol to the stomach-contents did not produce a red color, as the absence of free HCl is self-evident in these cases.

Looking at the table we see that in Cases I.-VIII., in which the total acidity varies between 36-68, the amount of dilution, necessary to obtain the end reaction with the dimethylamido-azo-benzol paper oscillated between 3-6, the larger numbers usually corresponding to a greater acidity. Only once (Case VI.) did we meet with an exception; here the acidity was 60 and the amount of dilution 12.

In the second group, Cases IX.-XXI., all suffering from hyperchlorhydria, the acidity varied between 72-100 and the amount of dilution between 7-18. Usually the higher amounts of dilution corresponded to a greater acidity, only once with an acidity of 100 the amount of dilution was 8.

Summarizing the results of the table, it is fair to assert that in a majority of cases there exists a certain relation between the acidity and the amount of dilution necessary to produce the end or trace reaction with the dimethylamido-azo-benzol paper. A dilution of from 3-6 would correspond to a normal, under 3 to a subnormal acidity, and over 6 to hyperacidity.

The numbers given refer to the examination one to one and one-half hours after Ewald's test breakfast. If we have to test after other more complicated meals (test dinner, etc.) hyperacidity would be indicated by somewhat smaller amounts of dilution (from about 6 times on), since we estimate approximately only the free HCl and the amount of the latter is relatively small after meals containing much albumin.

The method just described of approximately determining the quantity of free HCl in the stomach-contents will be of value in the following two conditions: (1) In examinations with the stomach-bucket, or where from other causes only small quantities of gastric contents are at our disposal. (2) In cases in which it is of importance to obtain at once an idea regarding the amount of acidity and the necessary solutions for titration are not at hand.

[2] The dimethylamido-azo-benzol paper can be obtained from Eimer & Amend, 18th street and Third avenue, New York.

LOCAL TREATMENT OF FEMALE DISEASES; ITS ABUSES.[1]

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THE advance in all branches of medical and surgical art requires frequent shifting of means and technic. The discussion of the local treatment of female diseases needs to be rewritten. A brief consideration of a few features that are easily demonstrable will be of probable interest.

The appreciation of diseased conditions is best obtained when all the senses required are brought to bear. To see and to feel leave but little doubt and the interpretation of the meaning of discoveries becomes easy.

To abdominal operations we are indebted for correction of our views of pelvic pathology and to new views of rational therapeutics and treat-

[1] Read before the Rochester Academy of Medicine.

ment. Such terms as peri-uterine cellulitis, pelvic peritonitis, pelvic abscess, pelvic hematocele, pelvic cellulitis, perimetritis, parametritis, metritis, endometritis, cervicitis, endocervicitis, ulceration of the cervix, menorrhagia, and metrorrhagia, need to be reviewed and modified or abandoned.

Much has been done in this direction, but many vagaries remain in minds permeated with the methods of quite recent times, and a strong impress has been left on the thought and practice of gynecology.

The commercial spirit has developed. Mechanical devices increase, the large sales of chairs and tables have invited undue emphasis to their uses. Applicators of all form abound. Drug houses add surgical specialties and present the new and great sellers to the profession they canvass with much profusion and persistence. The recent innovation of a gauze packer has been especially commended. Gauze packing is, with few exceptions, non-surgical, for it obstructs drainage and invites sinuses. To introduce the body tube into the uterine cavity, a preliminary dilation of cervix would usually be required. The sharp edge of the end of tube and its size are enough to condemn it; but its large sale is evidence that the trend of our practice is wrong. A small electric-lamp is vaunted as useful in vaginal exploration. The eye, with sunlight, and the finger, with educated touch, are simple and less cumbersome. The various forms of Peaslee needles are hawked around, regardless of the fact that Emmet long ago taught the classical principle that the perineum should be sewed from within and elevated, rather than sewed from without and depressed. Uterine applicators are fair sellers, but the profession must appreciate that they are harmful, even dangerous.

The subject of abuses may properly be studied best not from the standpoint of the instruments and appliances alone, but from the diseases to be met and the remedies to be used in their relief.

The most dangerous procedures are perhaps intra-uterine examinations, operations and applications. It is easy in the virgin to find an os uteri with a pin-hole opening, a tenacious plug, a superficial erosion. It is too readily appreciated in primiparæ or multiparæ that the os uteri is ulcerated, the uterus subinvoluted, its mucosa soft and studded with granulations. It requires a steady breadth of conception not to fall into the error of finding too much or exaggerating trivial symptoms into symptoms complex. The most dangerous instruments used in treating these diseases are dilator, sound and curette. The dilator of common use, Goodell's, has in the hands of the writer in at least two instances torn its way into the pelvic cavity. The second time was only a few days subsequent to the first, and great care was being exercised, but in the subsequent curetting of each case this instrument passed suddenly into the pelvis. I am sure this happens oftener than appreciated, especially in women who have never been pregnant. The sound should never be used. Its usefulness is more than offset by its dangers, both as to mechanical and germ-carrying features. The curette is of use when the uterus has failed to expel part or the whole of the products of conception, or when later the uterus does not contract because of fungous granulations of the membrane of uterine cavity. But the curette should be used with great circumspection and after careful eliminating diagnosis. Its use should rank with major operations and similar careful preparation should be made for its performance. Large, smooth, loop curettes should be employed to remove placental debris.

It has been my misfortune to remove on several occasions ovarian cysts filled with old blood extravasations subsequent to curettement. It seems probable that the violence to the uterine mucosa may have caused the pelvic congestion and effusion of blood into cysts. I have not met with these blood signs except when curettage had preceded the ovariotomy. In these cases temporary relief was afforded an associated dysmenorrhea, but in a few months the monthly pains were anguish in one patient and severe collapse, with hysterical delirium, imperceptible pulse, pallor and cold extremities were present. The curette is a valuable aid, but it needs to be used with more judgment than perhaps any other gynecological instrument.

The so-called local application for female diseases opens a number of chapters of interest. The patients recite with their friends the number they have received. The physician expects two or three visits a week, and for what? Does an erosion, the everted lips of a laceration, the tenacious mucus within the os, the thin, watery discharge from the uterine cavity, the enlarged uterus, the swollen appendages, improve by local means as usually applied with applicators from bottles labeled, "solution of nitrate of silver" "tincture of iodine," "carbolic acid," or their similars? How many men of twenty-five years' practice have faith in this work? Is any cause removed? Can a lacerated cervix, an enlarged ovary, a swollen tube, be influenced by cervix applications?

How can tubal disease be relieved when the first portion of the tube is so small and when salpingitis forms strictures, often permanent, so early? How can the uterine mucous membrane, so parchment-like in nature, require the strongest caustics to influence its healing, if diseased?

The use of pessaries has been much abused. They are of some value, but how many cures do they effect? Our instrument drawers are filled with obsolete patterns that attest youthful hopes not realized. Electricity as usually applied seems futile. Its advocates should not overlook the fact that ameliorism of symptoms is not proof of curing disease and careful, not severe, applications should be made tentatively, especially when puncture applications are made, as inflammation, even sepsis, may be caused.

The principles of practice must recognize the causes involved in producing female diseases. Constipation, with full bowel and rectum; the history of the girl at twelve who later applies

for relief from harm that befel her during the critical period of adolescence; the story of confinements not normal and repairs not made in season, with resulting torn and everted cervix or laceration of perineum, with descensus of all the abdominal contents, even the kidneys; the deduction by history or surmise of sexual infections and their sure involvement of the general system, as in syphilis, or the no-less-certain and life-time damage to ovary or tube if exposed to one who has, or ever has had, gonorrhea—all these make a picture that must fasten itself on the thought to make it broad enough to comprehend how female diseases are not to be abused in their treatment.

Calomel and salines indirectly lessen pelvic engorgement by partial depletion and drainage and directly by unloading the rectum and bowel and relieving pressure. Hot-water douches in recumbent posture, followed by soothing alkaline or stimulating astringent solutions of moderate strength, are useful, except in tubal and ovarian diseases, but if pain occurs when they are administered it is proof of harmfulness.

Repair the torn cervix by the Emmet method. Repair perineal laceration by the American or Emmet method of elevating the perineum and anchoring it well up. Remove appendages, if diseased; perform curettement only according to the dictum of this article, and dilate the cervix when demanded. These are general rules which I believe need emphasis.

Local treatment, as applied, will seldom be required. The use of tampons of cotton or wool with glycerine are valuable, but should only be used when the patient is confined in bed. Great care is to be exercised in this procedure, for lives have been lost by peritonitis after elevation of an adherent uterus or appendage has been accomplished by packing. No tampons with any medicament ever incorporated can cure organic tubal or ovarian disease, and their employment may be, as stated, dangerous to life.

As will be seen, the simple treatment of a symptom is out of place when treating female diseases. It is a complex subject and needs to be considered and met in a broad and comprehensive manner that permits neither fads nor methods of abuse.

A medical friend recently called my attention to an evil resulting from indiscriminate "local treatment," which seems probable. That is, the tendency on the part of both physician and patient to overstep the local application with the uterine applicator, and use a similar instrument to induce abortion. Undue familiarity with this form of treatment may invite more than is at first thought anticipated and eventually lead to crime.

This brings to our attention the moral question which is pertinent: Should woman, on whose virtue depends the welfare of a race, be needlessly exposed at frequent intervals to indignities that may foster a spirit of undue liberty and lessen the reserve given her by all the finest attributes of her peculiar organism? "The man who lays his hand on woman save in the way of kindness, is a villain" may be remembered and emphasized with profit by the physician to whom life and honor, remote and present, are both entrusted. The treatment of the sexual organs has always been the field of the charlatan and impostor. In no other form of disease, real or supposed, is it so easy to prey upon the imagination. Let not the power, the marshalled forces, the potent influence of gynecological thought and practice, or of medical work in the broad sense, lend itself to a purpose whose debasement by these alluring frauds indicates the ease with which deception and sham may be wrought where Nature is so strong and yet so weak! The purely scientific principles of practice should be closely followed. The patient's condition after careful diagnosis is to be announced with no evasion, but no fulsomeness, and the remedy, whether radical or systemic, prescribed according to the needs.

The individual is to be swerved from believing herself sick by giving her an increase of courage, stability of will, and a renewed self-confidence. Stimulation of the mind, not depressing statements, sufficient treatment, but not excessive care, will tide over the case and support the mental equipoise.

Mistakes in diagnosis are possible. Within the past thirty-six hours we removed the appendix from a girl of twenty, who had suffered severe menstrual pains for four years. We found the right rectus hard and a temperature of 99.2° to 100.2° F. continuing for two weeks. No appendiceal storm had broken, but at the recurrence of the menses the same fever was present, accompanied by inability to lie comfortably on left side, because of a pulling from the right side, a painful point over appendix, a small but hard appendix and anterior thigh pains. After close observation of the patient for two months the removal of the appendix disclosed its base retracted into the head of the cecum, with a stercolith in the apex of the appendix and the blood-vessels at the head of the cecum enormously enlarged. Probably typhilitis had been present. Passing the finger into the pelvis the right ovary was found to be normal in every way.

The close study of many female diseases will certainly limit the range of usefulness of "treatments," but enlarge the sphere of surgical relief and improve the care of remote and general disturbances.

DISINFECTION WITHIN AND WITHOUT THE BODY IN DIPHTHERIA.

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THE effectual control of diphtheria in an individual or a community is a problem that is exceedingly complex. There are at least three forms of disease that have been confounded under the name of diphtheria, and it is only since bacteriological methods of study have come into

use that these have been distinguished from each other with precision, they formerly having been regarded as modifications of the same disease rather than as separate diseases. They are diphtheroid, sore throat characterized by the presence of staphylococci; true diphtheria, characterized by the presence of the Klebs-Loeffler bacillus and septicemic sore throat, characterized as a rule by the presence of streptococci. Although these diseases occur separately they are nevertheless often associated in a characteristic way. Diphtheroid sore throat predisposes to the onset of diphtheria, so that if a patient having the former is exposed to the infection of the latter, diphtheria may begin at once without an incubation period. In like manner either diphtheroid or diphtheria may prepare the way for septicemic sore throat. Indeed, it is doubtful whether streptococcus infection can establish itself in the throat at all without some pre-existing disease, or lesion of the parts, just as erysipelas starts from some small scratch or puncture. Thus the septicemic form of sore throat, although very fatal, is not very contagious.

Diphtheroid is a harmless affection except as it predisposes to diphtheria, or septicemic sore throat, or both. Diphtheria in and of itself is dangerous, but is most dangerous if it becomes the channel through which septicemic infection gains access to the body. Against the streptococcus infection antitoxin is powerless, but the antistreptococcus serum may be used with good effect.

It is a peculiarity of the streptococcus to locate itself in the exceedingly tough and foul-smelling membrane that is characteristic of these cases. Hence the application of strong disinfectant remedies, as, for example, pure carbolic acid, has appeared to be of service. This is a measure, however, not to be recommended in ordinary diphtheria.

Erysipelas, puerperal fever, and septicemic sore throat, all are forms of streptococcus infection closely related to each other. Indeed, any of these diseases may originate the other, the liability so to do depending on the location of the infection in or on parts of the body accessible to the touch, rather than upon differences in the nature of the infection itself. A physician attending such cases should apply the principles of surgical cleanliness accurately and completely for his own security and for that of his patients. It may become necessary to go so far even as to abstain from seeing cases of ordinary diphtheria lest they become septicemic through contact of the physician in attendance with erysipelas, puerperal fever, or septicemic sore throat. During epidemic prevalence of diphtheria, the occurrence of diseases of either of these classes may have special significance and should be carefully watched with a full understanding of the dangers involved.

Furthermore, every surgeon knows that the danger of septicemia is very much increased if operations are undertaken in buildings where the plumbing is bad, and where there are untrapped drains. It is true that antiseptic dressings decrease the risk somewhat even under the most unfavorable surroundings, but a sore throat cannot be protected every hour and minute, as is a wound, and if that throat is diphtheritic, the barriers against septicemic infection are as absolutely down as though there were an open wound. The traditional prejudice against foul drains and the like as a source of specially malignant diphtheria is not without warrant. Indeed, such receptacles and not the throat itself appear to be the natural habitat of infection of this class. If carried on the person, it is by accident rather than as a part of the usual life history of the streptococcus infection.

The Klebs-Loeffler bacillus, on the other hand, appears to find its natural habitat in the throat, it becoming more or less atypical when grown in culture media outside the body. Although irregular in form and having its presence masked by that of other micro-organisms, there is nothing to prevent its growth in the albuminous material crusting the interior of drain pipes that are never cleaned nor flushed, unless it be too low a temperature at times. But the dried sputum from a diphtheritic patient kept at ordinary temperature has been found capable of originating living colonies of the bacillus for six months. This being the fact, the Klebs-Loeffler bacillus certainly could remain alive perhaps from year to year in underground drains, although leading a fluctuating and precarious existence. Such receptacles are specially liable to contamination through rinsings or expectorations from the mouths of persons having diphtheria, and thus also the infection may be renewed and kept alive, the persons living on the premises originating their own antitoxins and becoming immune. Where this has happened quarantine and antitoxin no matter how carefully applied with the aid of bacteriological tests, fail to eradicate the disease completely. The writer has met with instances which appear to be beautiful illustrations of this in three or four large institutions.

In an emergency of this sort where it is not possible to wait for improvement of drain pipes and plumbing, it is well to know that such fixtures, when incapable of being flushed adequately, can be sterilized by the aid of chlorine gas. In the presence of septicemic sore throat especially, this resource may be of the highest importance.

Nor is the diphtheroid form of sore throat unimportant. This form of throat trouble is much more common at all times than is generally supposed, not attracting attention, recovery being so rapid, unless the more serious diseases of the throat become prevalent, whereupon numerous cases of this type are brought to the attention of the physician, and are commonly classed as diphtheria for reasons that will appear shortly.

As has already been intimated diphtheroid predisposes both to diphtheria and to septicemic sore throat, shortening the incubation period to such an extent that the bacteriological test may show the throat clear from diphtheria one day and

strongly infected the next. There being such increased susceptibility a diphtheroid case may readily become diphtheria in the very act of examination unless adequate precautions are taken.

The fact that the physician's own throat is not red or sore is no proof that it is not infected, for infection often occurs without symptoms, particularly in adults when strongly exposed, and there is no stronger exposure than to receive the spray that comes from the mouth and nostrils of a child that is coughing and crying, as they often do, during an ordinary examination of the throat. The writer has met with very conclusive evidence that such particles of spray floating in the air are able to carry the Klebs-Loffler bacillus a distance of several yards. If the physician thus infected during an examination goes to another case without proper precautions, even though it be at an interval of several days, his own breath, and the spray from his lips in the act of talking, if nothing more, may convert a case of harmless diphtheroid into severe diphtheria in an hour.

This is the danger also that militates against the use of the bacteriological test to determine whether quarantine shall be established or not. Such testing can be relied on at the outset of quarantine only when it can be known with certainty that there is no secondary source of infection such as that just described. In other words, unless physicians in attendance upon cases of diphtheria, or moving about in a community where diphtheria is epidemic, have their own throats tested to see whether they themselves are clear of infection, and especially whether any precautions they may take are adequate, it is better to regard all cases of diphtheroid as diphtheria provisionally, using the bacteriological examination mainly for the removal of quarantine rather than for its establishment. If these suggestions are followed out thoroughly, there may be a surprise awaiting not a few members of the profession. The very anxiety that leads to seeing cases frequently, and testing and examining them often, may be a means of spreading the disease. The routine that the writer has been led to adopt is to be provided with squares of antiseptic gauze and corrosive sublimate tablets. A square of such gauze may readily be held over the mouth and nostrils with the left hand while the right hand is free to use the tongue depressor or swab. Both hands and the face should be wet with the sublimate solution before and after the examination and the gauze may be burned after being used. This, together with frequent spraying and cleansing of the mouth, throat and nostrils, and bacteriological testing, affords very complete security against either giving or receiving infection.

There are many precautions that will readily suggest themselves in regard to the care and disinfection of articles that have touched the mouth or lips on which infection may remain for extended periods in the form of dried saliva. Perhaps the worst of all such articles is the ordinary lead pencil, the use of which should be absolutely forbidden every diphtheria patient. The infection of milk through the agency of some one having a diphtheritic throat coughing or sneezing while handling it seems to have occurred in a case or two that have come to the knowledge of the writer. Sterilization of milk by boiling is the proper method during diphtheria epidemics, and always.

As regards ridding the mouth and throat of infection, there are a few points that deserve more extended notice than can be given them on this occasion. Especially important is the behavior of the diphtheria bacillus where there are cavities in the teeth. In such cases the person thus infected becomes immune, as if from antitoxin, but there is frequent recrudence of sore-throat trouble more or less typical in its resemblance to ordinary diphtheria. Often there are red spots somewhere near the bad tooth, or exactly opposite it on the interior of the cheek. These come and go, and there may be evanescent traces of membrane on the tonsils at intervals of weeks and months. Bacteriological examination at times shows the presence of the bacillus, and at times its absence. Sometimes it can be found by inserting a swab into the tooth cavity when not apparent in the mouth. A very interesting case of this sort under my observation after an exceedingly prolonged quarantine infected another person through the intermediary of a lead pencil, showing that although the bacillus had been present and absent in a curious way, and the throat symptoms had varied fitfully, there was true diphtheria infection throughout a period of at least four months. In this case there was a deep cavity concealed between two teeth and recovery was not perfect until the tooth itself had been removed.

In these cases the bacillus appears to be nourished by fresh supplies of particles of food, such as meat and potato, lodging in a cavity as in a culture tube at each meal. Thus the process is perennial and infection does not die out as it does when the throat alone is infected. It would seem that sterilization of the tooth cavity by cauterization would reach the source of the trouble at once, but it does not, the few bacilli remaining elsewhere in the mouth apparently reinfecting the cavity. A better plan is to insert a pledget of cotton saturated with some disinfectant solution before and after meals. Even then in very bad cases it may be well to have the tooth extracted.

An observation of this sort is very suggestive as to the amount of care required to be of any material service in ridding the mouth and throat of diphtheria infection by methods of disinfection. The perfunctory use of sprays, swabs or gargles apparently accomplishes so little in shortening the period of quarantine that some physicians practically have come to rely on giving the antitoxin and waiting. But where the infection is harbored and kept alive in the manner that has just been described neither the antitoxin nor waiting will insure recovery within any reasonable length of time. Meanwhile the person may have infected unconsciously a whole neighborhood or town.

Very likely the bacillus when lodged in the

spongy portions of the tonsils, or in some fold behind the palate, or in the nostrils, will die out gradually as the person becomes immune. But the process of its removal may be hastened and made more secure by constant sterilization of the parts as far as possible. Remedies for the purpose should not be irritating, in order that they may be employed constantly at very frequent intervals, the growth of the bacillus and its diffusion through the mouth being very rapid. Peroxide of hydrogen made alkaline by lime-water, or by the addition of equal parts of Dobell's solution is very good. Freshly made chlorine water with the addition of a little tincture of iron is highly efficient. A soft camel's hair toothbrush kept in a two-per-cent. solution of carbolic acid, and used with a lather of Castile soap is of great service, as is also dental floss drawn between the teeth. Such measures persisted in will clear up, as a rule the most refractory case, as determined by bacteriological examination in about a month, very few cases showing perfectly clear in as short a time as three weeks.

It has been the purpose of the present discussion to outline a few leading features so that whatever measures of disinfection are adopted, whether within or without the body, they may be used with full knowledge of the dangers and difficulty and complexity of the subject of control of diphtheria.

CEREBRAL APOPLEXY: ITS RELATION TO TESTAMENTARY CAPACITY.[1]

BY CHARLES SCHRAM, A.M., M.D.,
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IN offering a paper of this character to the Society, I am aware that it is in the nature of an innovation, being of necessity of a less scientific type than has marked those heretofore read. Yet its importance is manifest. It is the duty of every member of the profession to elevate and dignify the position of the expert, because through him the profession is exhibited to the public eye in a glaring light. By assisting him to speak with confidence on subjects whereon his opinion must be sought by the State, this duty is best subserved.

Apoplexy occurs at an age when individual responsibilities are apt to be greatest. Its victims are usually within the decade between the forty-fifth and fifty-fifth year. They have had time and opportunities for the accumulation of wealth and the attainment of posts of importance and prominence. The keen struggle for self-advancement and indulgence in the luxuries wealth affords seems to have caused a rapid increase in the number of apoplectic seizures. According to Dercum the number of fatal apoplexies in New York in 1868 was 356, in 1886, 762, and 1893, 1,171. These figures show an increase out of all proportion to the concomitant increase of population. According to the same authority about two-thirds of the cases of cerebral hemorrhage recover from its immediate effects. These statistics emphasize the importance of our subject.

Before attempting to gauge the immediate and remote effects of cerebral apoplexy on the intellect, it will be essential to state what the law requires of the testator to make his final wishes valid in its eyes. From "Redfield's Law and Practice of Surrogates' Courts" I find that a testator has testamentary capacity (1) when he mentally comprehends the nature of his act; (2) when he understands the extent and nature of his property; (3) when he knows the person or persons in whose favor he makes the will; (4) when he is unrestrained in the exercise of his will.

It is to be remembered, however, "that the clearness of comprehension and ability of expression which is required to understand the nature of and enter into a *contract* need not exist. The precise time where incapacity begins cannot be defined by an unvarying rule. Each case must be individually tested in the light of general rules and attending circumstances. The testator must have sufficient memory to give proof of testamentary capacity without prompting and to appreciate the particulars of the business to be transacted. Furthermore, the statue holds that "all persons, except idiots, persons of unsound mind and infants," may devise their real estate; and similarly that persons of certain ages and upward of sound mind and memory may bequeath personal estate.

Bearing in mind this liberal view of the law as to the varying intellectual conditions under which persons are entitled to have their final wishes respected, the opinion expressed by Dr. Gallard in a clinical lecture, delivered at La Pitié, on the post-apoplectic mental condition, is significant. The aphasic, he says, is (1) irresponsible, if he cannot manifest his lucidity by words, pantomime or writing; (2) his intelligence is impaired if he manifest his lucidity by words, pantomime or writing incompletely or sluggishly; (3) he is responsible if he manifest his lucidity clearly and intelligently by words, pantomime or writing.

Without discussing the testator's responsibility in regard to any other acts of a civil or criminal nature, if the last two conditions prevail, he clearly comes within the pale of testamentary competence.

Our next duty is to ascertain how we must proceed in order to establish to what extent the testator is capable of performing intelligent acts: As already indicated, intellect manifests itself by words spoken or written and by acts suggesting the meaning of wishes to be expressed, namely, pantomime or gesture. Disregarding for the present the condition of post-apoplectic stupor or semi-stupor, the suggestions made by Wyllie for the systematic examination of the patient supposed to be suffering from one of the various forms of aphasia are valuable guides.

Written or spoken forms of speech and ges-

[1] Read before the Harvard Medical Society of New York.

tures are examined into separately. The danger of overtaxing the impaired brain of the patient should be always taken into account.

1. How is spoken speech received and interpreted? Is the hearing good? Is there any difficulty in interpreting the meaning of words heard (word-deafness, auditory aphasia)? Replies even by gesture only will show whether or not he understands what has been said. Ask him to put out his tongue, shut his eyes, give his hand. Test especially his power of interpreting nouns and verbs. Ask him to touch his nose, eyes and chin as the parts are named; to whistle, shut his eyes and smile. By refraining from giving the patient hints, by gesture or expression of countenance, the answers to the above questions will determine the presence and degree of word-deafness (auditory aphasia).

2. How is spoken speech produced by the patient? When it is reduced to a constantly-repeated utterance, to one or two familiar words, to an emotional or conventional expression, the whole vocabulary should be carefully noted down. When considerable vocabulary can be used or interpreted, (*a*) record words or phrases showing defective powers of articulation. When there is lalling, stammering or slurring, (*b*) look for evidence of amnesia verbalis and its companion symptoms (articulative amnesia and paraphasia). Record his answer to the request to name ordinary objects and note any difficulty in remembering their names or the paraphrasing of nouns. A case in point of the latter condition is that of Bergman where memory for nouns had disappeared. A window being pointed out to her was designated as "that through which one sees." Mistakes in the use of words should be noted. When the patient is dumb, he should be made to write answers to questions, or, as suggested by Lichtheim, indicate on his fingers the number of syllables in the names of objects shown. If there is paraphasia, ascertain whether the person is conscious or not of the error in use of nouns, verbs, etc.

3. How is speech repeated or echoed? If spoken words reveal word-deafness, they should be repeated over and over again and accompanied by gestures or pantomime to make the person understand what is wanted. It is particularly important under these circumstances to extract evidence of competence to make a will valid. If words are echoed or a phrase attempted, it should be ascertained whether they are spoken understandingly.

4. How is written speech received and interpreted? Is the sight good? Is hemianopsia present? Does he understand questions put before him in writing? If he is speechless let him respond in writing to written requests, such as "Put out your tongue," etc. If there is partial ability to interpret writing or printing, ascertain to what extent it exists by showing him writing or printed matter in books or newspapers.

5. How is written speech produced? Let the patient write his name. Let him give written answers to simple questions. If he writes with ease, let him write at his leisure a history of his case. Note whether there is (*a*) paragraphia, corresponding to written translation of paraphasia; (*b*) the constant repetition of a syllable, word or phrase to express different meanings; (*c*) faults of spelling or syntax.

The right hand may be paralyzed or agraphic. Try writing ability of both hands. The ambidexterity acquired by some persons is remarkable. The patient should be made to write from copy and by dictation and examined as to whether he does so understandingly.

6. Examine as to gesture language—pantomime. Does he understand it? Does he employ it intelligently? Is he entirely incapable of employing it (amimia)? Does he employ the same gesture to express different meanings (paramimia)? Is his mind intoxicated with one particular gesture or series of gestures? It is to be remembered that the intelligent use of gesture language may fulfil the requirements of the law as to testamentary capacity.

7. If the patient has by occupation been familiar with or acquired memory pictures of algebraic, geometrical or other mathematical and scientific symbols, or musical notation, their retention or abolition must be inquired into.

8. Examine as to mind, soul or psychical blindness. Does he recognize ordinary objects and the purposes they serve? Does he recognize persons familiar to him before his illness.

9. Examine as to intellectual faculties and emotional inclination. This will vary with the social conditions of the patient.

The result of the above examination must be carefully noted as each negative or positive observation is made. As a check to possible error in judgment of the examiner, other persons should note independently and coincidently the result of their own observations. The latter may serve to furnish confirmatory evidence.

The data essential to the mental status having been obtained, we proceed to obtain from himself, or his friends, the particulars of the family history, namely, (1) organic or functional diseases other than those of the nervous system, affecting blood relations, giving especial attention to diseases of septic origin, diseases of a wasting character, and to intermarriage; (2) organic and functional diseases of the nervous system. We must not remain satisfied with noting instances of apoplexy, insanity, epilepsy, hysteria, neurasthenia, organic disease of the brain and peripheral nerves, but must obtain information regarding habits, idiosyncrasies and temper of near relations. In a similar manner and with attention to even greater details, if possible, the personal history must be entered upon, from childhood forward, not omitting to note (*a*) educational status; (*b*) psychical influences of occupation; (*c*) mental condition under varying exigencies, namely, temper and emotional inclinations; (*d*) habits.

Before passing on to the consideration of the mental status, accompanying various forms of

aphasia, singly or in combination to which, after eliciting the above information, each individual can be assigned, I wish to consider briefly the apoplectic state. For our purposes three forms of this condition are to be considered.

1. The comatose form, developing ordinarily after hemorrhage large in amount or located near nervous ganglia or tracts of critical importance to cerebration. The condition is a familiar one to every physician. It resembles that of meningeal hemorrhage or brain concussion from head injuries, uremic or diabetic coma, profound alcoholism, and the post-epileptic status. The patient cannot be aroused. The intellectual faculties are in abeyance. The individual is irresponsible and cannot perform a rational act. If the patient survive he passes after a few hours or days into the next state.

2. Post-apoplectic state. Motor paralyses are now evident. Sensory disturbances and aphasias may evince themselves upon investigation. The responsibility of the patient may now be determined by examination on the lines already laid down. The eventuality of an acute inflammatory process around a clot or an area of softening must be kept in mind. Delirium and epileptiform convulsions will supervene to indicate this complication.

3. In a third class we include all those cases in which the acute subjective symptoms are transitory. Partial or complete thrombosis, embolism or hemorrhage in the so-called latent area of the brain are the causative factors. Serous apoplexies belong in this category. Motor and sensory disturbances may be slight. Intellectuality is little disturbed. The individual is usually responsible.

Motor paralysis, including the motor or ataxic forms of aphasia, do not *per se* impair the normal activity of those ganglionic centers and nerve tracts essential in the recalling and evolution of memory pictures necessary to the performance of a rational act. In fact it is not an extraordinary occurrence to see individuals centrally paralyzed, active in the ordinary affairs of life. Cases of pure motor aphasia, that is, a hemorrhage the primary and secondary effects of which are so localized as to invalid only the nerve centers in Broca's convolution, are uncommon. Amimia or paramimia is often and agraphia and paragraphia sometimes associated.

To appreciate the significance to the individual of these lesions, we must bear in mind that impressions conveyed to the cerebral centers are (1) innate or elementary. The appreciation of light, of sound and contact are apparently manifested at birth. According to Roose, "Certain looks, tones and gestures, congenital reflexes, exist among the most distinct races of men from infancy." By a process of storage of memory pictures, for which a selective instinct for certain brain areas also is innate, the (2) acquired or cerebral faculties are developed. Memory pictures stored in the cerebral areas devoted to the reception of impressions from their respective senses, comprise the sum total of education. The association, evolution and emission of these memory pictures is characteristic of a normal mental activity. Its interruption through destructive influences brought to bear on the sensory areas and connecting nerve tracts marks the phenomena of aphasia. Memory pictures most firmly impressed by frequency of reception, or in company with some great emotion or at a time when the brain is in a condition of greatest receptiveness, are retained most tenaciously. They also survive destructive influences the longest. Hence the phenomena of apparent mental intoxication of aphasics with certain words or phrases, such as "yes" and "no" or oaths. (3) Finally under abnormal conditions the emission of associated activity of brain areas is set in motion without the control of the will giving rise to the phenomena of subconscious and unconscious mental activity. These interest us only indirectly.

We are now ready to consider the mental status of each variety of aphasia. That of motor aphasia has already been alluded to as causing in its uncomplicated form least intellectual disturbance. It is supposed to be due to a lesion at the foot of the third left frontal convolution. The patient is dumb or capable of attempting only the simplest words or phrases, which, according to the degree of mental intelligence, are apt or irrelevant (paraphasia). He understands spoken language and partly, at least, written speech. While normal articulation is impossible, written speech is, though exceptionally, retained unimpaired. If this is the case the patient is without doubt intellectually competent, as he evinces his capacity for the evolution of mental language which must precede the formulation of representative signs of ideas. He cannot echo dictation in any form, but copies writing and may write from dictation. Amimia and paramimia may be and often are incidental conditions.

Auditory aphasia refers to damage done to the posterior thirds and of the first and second convolutions of the left temperal lobe, resulting in word-deafness. Spoken language conveys no meaning but written or printed matter does. Auditory intelligence being abolished, the patient, therefore, being almost or quite unable to appreciate word values and coherence, may not be able to make himself understood. His speech may be reduced to an intelligible jargon. For a similar reason echoing dictated speech or writing from dictation is impossible. While writing may be copied without difficulty, writing spontaneously may be impossible or convey no meaning.

Gowers considers will-making incompatible with word deafness. If, however, the visual tracts and the tracts between visual centers and motor speech centers are intact, writing and speech is impossible. The individual under these circumstances is responsible. (A patient of Lichtheim could not understand speech, but could read, write and copy speech.) As the well-known Prof. Lordat, who had lost the power of speech and auditory appreciation, recovered

sufficiently to write a history of his own case. Hallucinations of hearing occur.

Visual aphasia, ascribed to lesions of the angular gyrus of the left parietal lobe, is less serious in its effect on the intelligence than the variety just described. The patient ordinarily understands what is said to him, writes upon dictation and expresses himself rationally.

The memory for the meaning of writing or print is gone, nor can he write spontaneously nor understand what he himself has written upon dictation. Hemianopsia is an incidental condition, a factor also in producing hallucinations. The case of Dr. Mills (Hamilton's System of Legal Medicine) is an excellent illustration of the condition. The patient was a woman sixty-six years old who had light lateral hemianopsia; no pupillary inaction; recognized objects seen, heard, felt, smelled and tasted; recognized persons she met, but this capacity failed; confused names of her four sons; understood what was read to her; did not understand printed or written words; could sign name and write a few short words on dictation, but written words were illegible except the word "cat." Although she recognized objects by sight, hearing and touch, she could not name them correctly on seeing them. Said she knew the name but could not recall it. A stamp she called "ticket" or "letter" and pills "pencils"; knew their uses though she named them wrongly. Called postal card "stamp" and watch "key," saying it looked like a key; a bunch of keys were called "locks", but she evidently knew their use. Could not name pocketbook when held up, but did so quickly when she touched it.

Finally we have to consider the mental status of verbal amnesia, soul blindness, the conduction aphasia of Wernicke. This according to Kussmaul is the severest form, leading to confusion of thought and diminution of intelligence. The patient is ordinarily irresponsible. The lesion is in the concept area of the brain, located by Wernicke in the convolution of the island of Reil. The condition results from the cutting off more or less completely of the connecting nerve tracts between the concept area and the areas in which are stored auditory, visual and motor word memory centers. Patient may understand spoken or written speech and copy writing. There may be inability to echo speech. Paraphasia and paragraphia prevail. The use and understanding of gesture speech may be lost. Bergman's case in which nouns disappeared has already been referred to. Starr gives a case where paraphasia progressed to total aphasia. Though the person knew the disposition he wished to make of his property he could not indicate it by word of speech or writing. The condition may be appreciated by studying Lichtheim's diagram of all forms of possible aphasia. It must be remembered that in the course of weeks or months all forms of aphasia may improve or even entirely disappear.

The following are illustrative cases of apoplectics whose wills were contested. Baltman reported in 1743 the case of a resident of Mainton, Hanover, whose will made by signs was sustained. Another man sixty-three years of age, a hemiplegic and aphasic, made his will by signs, but it was not sustained as his mark was in the middle of the card instead of at the end of it. In the Parish will case reported by Dr. Mills, the first will was made when the testator was fifty-four years of age. The year following had a stroke from which he recovered. Seven years later he became paralytic and aphasic from a severe stroke and developed epileptic fits. The first codicil was made six weeks after the last apoplectic stroke. Four years later he executed a second codicil, five years later, a third codicil. The Supreme Court and the Court of Appeals decided against all three codicils.

Mrs. Fillmore, widow of President Fillmore, whose case is reported by the late Dr. Landon Carter Grey, manifested symptoms of impaired mentality before she had an apoplectic stroke. She executed two wills within eight months of the stroke. On Dr. Grey's testimony she was judged to be insane and incompetent. The following case is reported by Dr. C. K. Mills (Hamilton's System of Legal Medicine). A man was married to a woman, after he had been living with her and had had children by her. The marriage was legally consummated. After an attack of apoplexy with aphasia, he could answer questions intelligently. The marriage was considered valid and the will in the wife's favor was sustained.

A case in which I was asked to give testimony was that of a woman, over seventy years of age, who had two apoplectic strokes at an interval of about four weeks; after the first stroke she became hemiplegic, spoke sluggishly and with some difficulty, but apparently suffered from no distinct form of aphasia. She understood what was going on about her, gave directions as to household affairs; was able to recall occurrences of recent and remote date, had frequent spells of somnolence. About ten days after the first attack of apoplexy she executed her will. Its validity was sustained by the Surrogate and the case was not appealed.

SURGICAL DIAGNOSIS.[1]

BY JAMES J. MCKONE, M.D.,
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DIAGNOSIS is the art of discerning a given morbid condition, recognizing its character and distinguishing it from a condition of health or disease of another kind.

The judgment formed in this manner in a narrow sense is simply giving a name to a disease, but from a broader view it consists of something more than this. It shows how the whole organism has been affected from the beginning, the character of the ailment and how the organism as a whole has been affected, or how it has acted locally. The severity of the disease and the pa-

[1] Read before the Pierce County Medical Society.

tient's prospects are arrived at by this method which is alone the sure guide to treatment.

We attain a diagnosis only by having our preception of the behavior in a general manner of the patient sharpened and by carefully combining with it the experience derived from previous examinations. Diagnosis is partly an art and partly a science; an art because it demands a cognizance of the means and their application to arrive at the desired result; a science because it comprehensively takes accounts of general facts and of principles based on those facts.

By surgical diagnosis I mean the differentiation of those diseases which are liable to require operative treatment, but there can be no hard and fast rules at the present time between medical and surgical diagnosis for the one must be associated with the other, as the majority of all surgical cases first seek the physician. It is, therefore, very important for the latter to be well versed in the recognition of surgical affection, as only by the prompt resort to surgery in many diseases can the patient be given the best means of recovery.

Surgical diagnosis was given prominence as far back as 1500 B. C. when in the Papyrus Ebers then written it says: "If this tumor goes and comes under your finger, trembling even when your hand is still, say it is a fatty tumor, and treat it with the knife, after which treat it as an open wound." The writings at that time also laid stress on stone in the kidney followed by abscess with directions to cut for it, also articles on dislocation and fractures.

In ancient times the surgeon was not supposed to be a diagnostician, but to work only under the direction of the physician, who belonged to the nobility, while the surgeon was inseparably connected with the barber.

The celebrated John Hunter, who lived between 1728 and 1793, did much to encourage the surgeon to be a physician also. The margin between the two gradually grew less until a surgeon became a physician to a greater or less degree, and the surgeon then diagnosed as well as treated his own cases.

It is often said of prominent surgeons that they lack diagnostic ability, this comes in part from the ancient times when they acted simply under the instruction of the physician, but more from the fact that their technic and skill at the present time are so marvelous that their diagnostic ability suffers by comparison, and again the surgeon's mistakes become at once apparent when the disease is laid bare by the knife, while a physician can go on treating a case with no opportunity to disprove his judgment. Taking all the facts into consideration I have no doubt that the surgeon will compare favorably with his brother medical man.

The qualifications of a surgeon were formerly put down that he should "have the eye of an eagle, the heart of a lion and the hand of a woman." The eagle's eye and the woman's hand are still very necessary, but the lion's heart, as it was understood in those days to be one who would not be deterred by the cries and struggles of his patient, since the days of anesthetics has no place in our profession. It also probably refers to the courage required to operate in pre-aseptic days.

The principal qualification of the surgeon at the present time is that he be a good diagnostician, as it is for this purpose he is mainly called in consultation, *i. e.*, to see whether or not the patient is suffering from a medical or surgical disease. For that reason a man who is not a good general practitioner will never become a successful surgeon. For how else would he be able to weigh all the evidence in the different cases. He must know well his anatomy, his physiology, his bacteriology, the natural history of disease and his acquaintance with human nature not too limited. We often see hysterical joints treated for other affections, or two different diseases in the same patient, one a medical and the other a surgical disease. With how many different affections might not a subacute inflammation of the gall-bladder be confounded? Who has not been called to a case of pneumonia and found a patient suffering at the same time from some septic condition in a distant organ? Time and time again we see acute osteomyelitis treated for rheumatism and I might add disease of the hip-joint and aneurism mistaken for this affection. For this reason a general practitioner should keep thoroughly posted on all surgical diseases whether he intends to operate or not. You cannot separate the two. A man may become so expert in one branch that the number of his patients in that particular line will become so numerous he must give his whole time to that department of medicine, he then becomes a specialist because his skill has made him so and long years of practice have particularly adapted him to readily recognize those diseases, but this, I am sorry to say, is not the evolution of the modern specialist. He is a specialist before he is a general practitioner, and every case is diagnosed from the standpoint of his own specialty.

I have said the principal qualification of a surgeon is to be a good diagnostician. This is at times varied with the popular notion that a surgeon should be a good cutter. Now the cutting has very little to do with it. We can teach a man of any mechanical ability in fifteen minutes how to amputate a leg. Any butcher can amputate a limb, but it takes a surgeon to save one. We charge five dollars for doing an operation and four hundred and ninety-five for knowing what to do. In the principal operations the question is to know what to touch and what to let alone. The hand must be trained to feel, the eye to see, the ear to hear and the mind to think. But we may be told this belongs to treatment and not to diagnosis; this is true to a degree, but while one is operating the conditions one meets must be diagnosed as the operation proceeds and in many cases we diagnose by the operation. This fact led many surgeons to group diagnoses of the abdominal cavity,

claiming something existed which did not belong there—when a tumor was found—and that the foreign body must be removed whatever its nature, and there was time enough to diagnose when we had it in our hands. This is sound advice, as a general rule, but there are many exceptions, as when the question arises as to the connection between a certain growth, suppuration or other morbid condition and the general state of the patient, whether it is the cause or effect or is independent.

It would be folly to submit a patient suffering from a benign tumor of the uterus to a hysterectomy, when said patient had a pleura filled with pus, yet I have seen this done under the mistaken idea that the suppurative symptoms were due to the tumor.

In diagnosing a case, first consider the history of the patient. This is one of the most important things in making a correct diagnosis. Find out the length of time the trouble has existed, how it first commenced, the nature of the accident or injury, and the amount of suffering or inconvenience connected with it. You all remember the old story of a college professor who, when lecturing on diagnosis to his students, brought in an unconscious man with a swollen jaw. He then asked the students to diagnose the case without an examination or a history; one said the swelling was a fatty tumor, another said it was a cyst, another said it was a bony tumor of the jaw, and so on, as many different diagnoses given as there were students. Then the old professor opened the man's lips and turned out a quid of tobacco—the man was drunk.

Next comes inspection. This must always be one of our first diagnostic efforts. If the abdominal walls are rigid and fixed, we should suspect peritonitis; if severe pain exists which is relieved by pressure and associated with restlessness, colic may be suspected; if we can see the intestines contracting through the abdominal wall, obstruction is probable, and in these cases, especially if vomiting be present, always inspect the hernial openings; if the prominence is more on one side than the other, then ovarian tumor should be suspected; an enlarged kidney may bulge in the right or left abdominal region, while a descended bladder may occupy the whole abdominal region. The umbilicus should be observed. It is flattened in ovarian tumor and bulges in ascites. Local edema over a tumor frequently shows whether it is a growth or an inflammation. Thinning of the skin is often well marked in ovarian tumors.

Palpation is next performed and is also very important. With the hand flat, feel the edge of the liver; note its size, its shape and degree of hardness; special resistance over any part may point to disease. When a tumor is discovered, palpation may bring out its degree of hardness, size or fixation. Pulsation may be elicited if expansile dependent on aneurism or rapidly growing sarcoma. If non-expansile it may be a solid tumor which rests on the aorta. We may also determine whether the tumor is solid or fluid, movable or fixed. In palpating distinguish whether the tenderness is superficial or deep seated. For instance the reflected pain of appendicitis is usually above the umbilicus, while the deep pain is at McBurney's point. Again, the reflected pain of ovarian inflammation may be in the costal region, while the deep pain is in the ovary itself. Free fluid in the abdominal cavity does not give rise to a splashing sound, while in a dilated stomach when mixed with air this sound may be heard. Vaginal examination for pelvic disease is of great importance. In the case of tumors their connection with the uterus can be made out and the character of the growth may also be determined. If hard nodules can be felt in the peritoneal pouch with a history of failing health, malignant disease can usually be diagnosed. Cancer of the base of the bladder can also be felt with the finger in the vagina.

Rectal examination is no less important than the vaginal. By this means any effusion in the pelvis, the tubes or the ovaries, can be examined; also the pelvic glands and the general contour of the pelvis.

Ausculation must not be omitted. Listen for fetal heart sounds and placental bruit in all cases of suspected pregnancy.

Pain may be absent, but is present in most cases. Note the degree of suffering, how it originated, its location. If it has its chief seat over the cecum or umbilicus, it is probably appendicitis. If it is in the right costal region below ribs and the patient has had several attacks and the pain passes back to the scapula, and especially if some seizures have been followed by jaundice, gall-stones are the probable trouble. If pain is ovarian it is generally referred to the front and down the thighs. Stomach pain usually radiates to left scapula region, while gall-bladder pain radiates to right scapula region. The explanation of this lies in the connection between the sympathetic nerves which pass along the blood-vessels and the corresponding spinal nerves. For instance, in appendicitis, although the disease is of cecal origin, the first pain complained of is nearly always at the umbilicus or just above it. The reason for this is that the appendix receives its blood-supply from the superior mesentric artery and the nerves which accompany it communicate with the spinal nerves at a higher point than those which supply the descending colon. (Warren and Gould.)

To facilitate diagnosis we should always employ all the aids at our command. The microscope, the X-rays which, however, have been somewhat disappointing, for on account of the thickness of the muscles of the loin and the abdomen we have not been able, as we first expected, to make out renal biliary calculi. The X-ray is still, however, quite useful in fractures and dislocations.

We should not overlook the examination of the urine, both chemically and microscopically. The vomited matter and feces should also claim our attention.

Always compare a diseased member with the sound member. When called to an accident in the street or in a public place, where a minute examination is impossible, never venture a diagnosis, because a patient may be injured in several different parts of the body. He might have a compound fracture of the ankle and at the same time a dislocation of the hip. The chances are in the majority of these cases of accidents that the patient when taken home will call his family physician, and if we should overlook an injury which he might discover on account of his better facilities for examination we should surely be blamed and our reputation would suffer in consequence. For this reason we should have the patient removed at once to his home or to a hospital where a thorough examination can be made, calling in a brother practitioner if necessary. Begin at the head, examine the skull, the face, then the neck, passing the hand over the trunk, examine the ribs, then examine each bone separately, if the patient is unconscious and unable to locate his pain. If patient is unconscious and suffering from a supposed injury of the joints or a fracture, give him an anesthetic and examine the part thoroughly, so, if anything should happen in the future, we can at least show that we have done our duty as far as surgical skill can.

STATIC ELECTRICITY IN THE TREATMENT OF SPRAIN.

BY LEONARD C. STANFORD, M.D.,
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BEFORE recounting the following cases, I desire first to describe briefly the method of application. The electricity is generated from a Holtz machine of the largest size. The patient is placed on an insulated platform, which is connected with the negative pole of the machine by a brass rod. An electrode connected with the positive pole by a brass chain gives off the spark, after the circuit has been completed; the length of the spark being from two to four inches. The application is made over and around the painful areas by the positive electrode. The administration lasts from ten to fifteen minutes, and is occasionally broken by a short intermission. This in very short outline was the method of treatment pursued in the treatment of sprain in the patients whose histories in brief are recorded. Most of the injuries occurred on the football field and they offered a wide range for the application of this remedial agent.

Case I.—A. Sprain of ankle. Injury sustained a few hours before treatment. Ankle had been previously sprained and patient incapacitated for two weeks. At time of present injury had just recovered from first. Examination showed ankle slightly swollen, exceedingly tender over internal lateral ligament. Patient walked with a cane. Electricity was used, as described, with marked immediate relief. Patient walked without pain for several hours. There was decided improvement on the following day. Daily applications of electricity were made for five days, when the patient experienced no difficulty in walking. Two or three days later played football with no subsequent injury to ankle.

Case II.—G. Sprain of ankle. Patient was seen day after the accident. Examination showed swelling and tenderness over internal lateral ligament. Patient used cane. He was treated twice a day for two days, daily for four days, every two or three days for two weeks. He walked without pain or limp on the sixth day, but experienced considerable difficulty in playing football from inability to stand on his toes on the injured side. He played regularly about two weeks after the injury.

Case III.—B. Sprain of ankle. Patient was seen immediately after injury. Examination showed right ankle tender and somewhat swollen over both lateral ligaments. Patient on crutches. After one application of electricity, patient walked in office without crutches. Treated twice on subsequent day, daily for three days after. Walked without difficulty on the seventh day. Some few days later, turned the same ankle and received daily treatment for one week. During this time, walked with a cane, at the end of it, without.

Case IV.—K. Seen soon after injury. Right ankle swollen. Marked tenderness over external lateral ligament and head of malleolus. Treated daily for three days. Every other day for ten days. Walked without difficulty in one week. Patient subsequently had persisting pain on pressure over head of fibula, apparently in the bone. This pain was not relieved by electricity. It, however, did not interfere with his walking.

Case V.—G. Patient was seen day after injury. Examination showed some tenderness over internal lateral ligament. No swelling. He limped slightly. There was marked relief after the first application of spark. He walked without pain. Seen subsequently twice, on successive days. Played football about four days later.

Case VI.—McC. Patient was seen soon after injury. Examination showed swelling and tenderness over both lateral ligaments. Patient on crutches. Relieved after the first treatment. Application daily for three days, every other day for two. Walked comfortably on fifth day.

Case VII.—W. Patient was seen on the afternoon of injury. Examination showed swelling and tenderness over both lateral ligaments. Patient on crutches. Treated daily for four days, every other day for two. Marked improvement from the start. Walked easily on the sixth day.

Case VII.—S. Patient was seen immediately after injury. Examination showed ankle very much swollen; swelling reaching well above the ankle. Great tenderness. Patient on crutches. The relief in this case was specially marked. He received daily treatment for six days, every other day for two. Walked with comfort on the eighth day.

Case IX.—W. Patient was seen immediately after the injury. Examination showed the ankle

to be much swollen and very painful. As it was impossible to use electricity at once, cold applications were made until the following day. When seen then the ankle was extensively swollen, the tenderness had somewhat abated. Patient, however, suffered even on crutches. Treated daily for six days. Walked without crutches on the fourth day, without a cane on the eighth day. Played football in about two weeks.

Case X.—McB. Synovitis of knee. Examination showed slight effusion in synovial membrane of the knee. Joint painful. Electricity relieved the pain to some extent. There was not much improvement in several successive applications, therefore other treatment was employed.

Case XI.—L. Patient was seen immediately after injury was sustained. Examination showed the knee joint to be swollen on the inside and very tender. No effusion. Patient on crutches. Treated daily for five days. Walked comfortably at the end of this time. There was marked immediate relief from pain after the application of electricity in this case.

Case XII.—T. Synovitis of knee. Patient had suffered from several previous attacks of synovitis of the knee. He was seen ten days after his last injury. Examination showed the knee to be swollen and painful. The structures about the joint were thickened, there was, however, no effusion. Patient complained particularly of pain on the inside of knee and weakness and he could not walk without support of bandage and cane. Treated daily for several days. At the end of this time the joint was much less painful and stronger. He walked without bandage and cane in one week.

Case XIII.—R. Synovitis of knee. Examination showed marked effusion. No special result followed two applications of the spark, and treatment was discontinued.

Case XIV.—W. Synovitis of knee. Examination showed extensive effusion in right knee joint. Electricity gave no relief, and other means were employed.

Case XV.—K. Synovitis of knee (severe). One application of electricity relieved the pain to a slight degree. Subsequently it seemed unsatisfactory, and patient was treated otherwise.

Case XVI.—O. Muscle bruise of thigh, very much swollen and exceedingly painful. Patient on crutches. The lesion, although extensive, seemed superficial. The patient was relieved at once, and after daily treatment, walked comfortably in about a week.

Case XVII.—O. Severe muscle bruise of thigh. Examination showed extensive swelling and tenderness of structures, extending from knee to hip. Relief from electricity proved but slight, and patient was treated by other means.

Case XVIII.—C. Synovitis of knee. Patient was seen one month after injury had been sustained. Plaster cast had just been removed from knee. Examination showed no effusion. Knee tender on both sides of joint. Patient on crutches, absolutely unable to bear his weight on injured side. Tenderness was relieved to a marked degree after the first application of electricity. Walked without crutches five days later, having received daily applications of the spark. Walked comfortably without pain ten days later.

Case XIX.—C. Woman forty-five years old. Well in every way to one year ago, when she struck her left knee against a table. During the few days following she suffered severely, and was in bed for a week. At the end of this time acute symptoms mostly subsided. She was unable, however, to walk without pain, and this continued some time. Examination at this time showed some swelling on the inside of right knee joint. Slight tenderness on pressure. Cartilage thickened. Atrophy of one inch, measured six inches below patella. Patient walked with a cane and with considerable effort. A single treatment with electricity relieved her pain considerably. This was repeated daily for one week. During this time patient was freer from pain than at any time since receipt of injury. At the end of two weeks walked comfortably for a short distance without any support. At the present time walks everywhere without discomfort. She receives electrical treatment every three or four days. Atrophy January 1st was one-half inch.

The first eighteen cases quoted constitute a small portion of the number of cases treated in a similar way that have come under the writer's observation. They afford, however, sufficient material for a few conclusions.

1. For sprains with little or no effusion, as, for example, sprains of the ankle, the spark affords a very satisfactory means of treatment. There is immediate relief, which lasts from two to four hours. At the end of this time, some reaction follows, depending directly upon the amount of work put upon the injured limb. Aside from this immediate relief, there is a marked permanent improvement in the majority of instances. In the ordinary cases of sprained ankle, daily applications of the spark made for five to seven days were sufficient to remove all lameness, and the patient walked with comfort a day or so later and in many instances played football. Where it was necessary for a man to use his ankle for football, if the joint was somewhat weakened, various means of support were used.

2. In those cases in which effusion was present to any extent, as, for example, synovitis of the knee, the spark, while for a short time relieving the pain when it existed, seemed to have but little effect otherwise. In these cases, however, after the effusion had been removed by other methods, it was a valuable aid in stimulating and strengthening weakened structures.

The results obtained by this method of treatment in injuries of long standing are not generally as satisfactory as in the acute variety; yet, it seems from Case XIX., as quoted, there are certain instances where it may be of great value.

Care should be exercised in its administration, as occasionally an unpleasant reaction follows. This occurred twice in the writer's experience.

In one instance one hour after the administration of the spark a patient treated for a sprain of wrist suffered a chill and rise of temperature. Constitutional symptoms of some severity supervened and persisted for three days. She was, however, in an unsuitable condition at the time of administration, having been confined but two weeks previously. In a second case the patient with a sprained ankle suffered from a chill and rise of temperature an hour after the administration of electricity. Subsequently this attack proved to be typical quotidian malaria, the occurrence of which might have been influenced by the electrical treatment.

MEDICAL PROGRESS.

Roentgen-Rays and Carcinoma of the Breast.—A. CLARK (*Brit. Med. Jour.*, June 8, 1901) has used the Roentgen-rays in carcinoma of the breast. In one case, after such treatment for nine weeks, marked improvement was shown. The tumor diminished in size, the ulceration diminished and became studded with patches of of epithelium; pain was decreased to a marked degree. Later the glands of the axilla became decidedly smaller. The rays are employed five days a week for fifteen minutes at a time. At the end of the nine weeks the patient's general condition was markedly improved, though she received no medication.

Ringworm.—In speaking of the treatment of tinea tonsurans or ringworm, A. RAVOGLI (*N. Y. Med. Jour.*, June 29, 1901) says that any substance capable of producing the casting-off of the epidermis will be sufficient. On the extremities, a solution of bichloride or iodine or a mixture of chrysarobin and resorcin will be sufficient, but when a hairy surface is affected, the follicles become invaded and epilation is usually necessary. If on the scalp a mixture of crude coal oil and olive oil may pe rubbed daily on the scalp by means of a strong paint brush. Pustulation may result, but this is beneficial. Another more elegant method is to use a one-per-cent. solution of bichloride to moisten the sponge attached to the positive pole of a battery and apply this to the diseased area for about one-half hour each day. He believes that children should not be kept from school, but arrangements should be made so that they could be properly isolated and treated at school by the teacher under the direction of the physician. Barber-shops are a very common source of infection and will continue to be so till sterilization of utensils after use is made compulsory by law.

Skiagraphs and Their Medico-Legal Relations.—The indiscriminate employment of skiagraphy for fractures is unnecessary. Most fractures can be diagnosed without this means, but H. GOLDING-BIRD (*Brit. Med. Jour.*, June 8, 1901) says there are two classes of doubtful cases in which skiagraphy is most advisable, those in which certain of the existence of a fracture, the surgeon does not know its extent or exact location, and those in which the existence of a fracture is doubtful. By this means the physician will protect himself. Often the skiagram will show a most irregular outline of bones which have been fractured though, the functional activity of the part involved is perfectly satisfactory. One who is not an expert may mistake epiphyseal lines for fractures. A foreshortened view may resemble in the neck of the femur an impacted fracture. Fracture at the base of the olecranon is simulated when the light is directly over the bend of the elbow. The acromioclavicular joint resembles a fracture. The appearance of a gradual thickening of bone can be produced at will. Fractures may be overlooked. The line of light caused by a fracture can always be seen, though the irregularity of the bone outline may be completely masked, thus hiding a fracture. One may overlook a fracture in ribs or vertebræ. The center of ossification in the ends of young bones may look like detached bone. Bones of the skull (base) with extravasated blood may not seem fractured. As rarely callus does not show in skiagraphs, it may seem as if fracture still exists with separation of the bone ends. Foreshortening and want of parallelism between bone and plate can produce distortion, the latter giving an appearance of gradual thickening or expansion of the bone. The interpretation of skiagraphs must always be made by an expert.

Apical Presystolic Murmurs.—C. C. GIBBS (*Lancet*, June 8, 1901) says that the following conditions are met with when presystolic murmurs are heard at the cardial apex: Obstruction of the mitral orifice, due either to sclerosis or adhesions, or to the invagination of an auricular thrombus; simple dilation of the mitral orifice; roughening of the margins of a normal-sized mitral opening; insufficient aortic valves, with normal mitral opening; a simple dilated mitral opening or a dilated mitral opening with thickened appendages. The author is certain of the fallacy of the Gairdner theory of the presystolic murmur being caused in the auricular systolic blood-current. Anatomical and pathological conditions do not support this conclusion.

Spasmodic Constipation.—Two forms of spasmodic constipation are distinguished by MAZERAN (*La Presse Méd.*, June 22, 1901). The first is an independent affection; the second is symptomatic, depending on a variety of causes, including especially disorders of the genito-urinary tract, traumatism of the abdominal wall, hepatic colic, stone in the ureter, gravel, intestinal parasites, foreign bodies, hemorrhoids, rectal fissures and fistulæ. Primary spasm is most common in young females and neurotic males or brain-workers. There is frequently an exaggeration of the constipation in women before the menstrual period; rarely is there deficient assimilation or loss of weight. There is an absence of dyspeptic history. Sensitive abdomen, meteorism, undulatory peristaltic zones, pseudotumors

due to contraction, tenesmus, passage of odorless gas, gastric hiccough and thoracic constriction, are characteristic. Purgative treatment is absolutely negative and antispasmodics are indicated; belladonna, asafetida and zinc valerianate are useful. Physical measures include the use of the abdominal douche, sitz-baths, massage, and enteroclysis. Curative treatment is above all hygienic.

Influence of Lecithin on Metabolism.—The experiments of DEGREZ and ZAKY (*La Semaine Méd.*, June 19, 1901) as to the effect of lecithin, have important therapeutic application. Injected subcutaneously or administered by mouth to guinea-pigs and dogs, lecithin in doses of 5 to 6 centigrams caused a marked increase in weight. During the period of treatment there was observed a marked increase in urea and in total nitrogen eliminated, and a diminution in the phosphoric acid of the urine. Evidently lecithin favors the utilization of phosphorus in the economy.

Porro-Cæsarian Section for Placenta Prævia Centralis.—A Porro operation for placenta prævia was reported by Lawson Tait in 1899. W. J. GILLETTE (*Boston Med. and Surg. Jour.*, July 4, 1901) reports a similar case. The os was dilated as large as a ten-cent piece and every attempt at forcible dilation was accompanied by hemorrhage which could not be controlled by tampons. The patient had already bled furiously and had a weak pulse of 140. As further hemorrhage threatened her life, Cæsarian section was performed. The uterus could not be induced to contract and free the placenta, so the latter was peeled off manually, after which, contraction being still unobtainable, the uterus was amputated above a rubber cord previously placed around the cervix.

Leucocytes in Gastro-enteric Diseases in Infancy.—The normal leucocyte-count in infants under ten months, according to recent studies by JAPHA (*Jahrb. f. Kinderheilk.*, 1901, p. 179) averages 13,500. The individual count in children of the same weight and age varies greatly. Mononuclear cells predominate, the average number of polynuclear cells being 42 per cent. In dyspepsia, infantile atrophy, and gastro-enteritis there is no change in the proportions of the various sorts of white cells. In follicular enteritis and cholera infantum, with marked intestinal lesions, there is an absolute increase in the total leucocytes and a small relative increase in polynuclear cells. Milder cases of follicular enteritis show no alterations in the proportions of the leucocytes. Japha maintains that the lymphocytosis described in intestinal diseases in infancy does not exist. The fact is that there are many more lymphocytes in infants than are found in adults.

Forced Flexion and Adduction in Sensitive Hip-Joint.—As a temporary measure in cases of extreme sensitiveness of the hip-joint with persistent night-cries, E. H. BRADFORD (*Boston Med. and Surg. Jour.*, July 4, 1901) tried putting out of action the muscles connected with the spasm which caused the cries. The child was etherized and a plaster bandage applied to the limb which was forcibly flexed and slightly adducted. A complete cessation of night-cries followed. A month later the limb was again placed in a straight position with traction and a recurrence of the night-cries took place.

Fixation of Preparations of Blood by Chloroform.—JOSUE (*La Semaine Méd.*, June 19, 1901) recommends chloroform as a fixing agent for cover-glass preparations of blood. After drying in the air the preparation is plunged in chloroform for two minutes and allowed to dry again before the stain is applied. The author believes that this method of fixation results in more perfect coloration than can be otherwise obtained, for example, with Ehrlich's tri-acid stain.

Widal Reaction.—Although four years have elapsed since Widal's publication of his serum reaction, most of his statements, according to TOBIESEN (*Zeitschrft f. klin. Med.*, Vol. 43, No. 1 and 2), are still adhered to, with one signal exception, however, namely, the proper dilution. While Widal stated that an agglutination occuring after a dilution of 1 to 10 is sufficient, most observers are agreed that a safe diagnosis can only be made if it occurs in 1 to 50. The writer has tested the reaction on material collected over three years, using different attenuations, from 1 to 10 to 1 to 200 Of 350 clinically undoubted cases of typhoid the reaction was positive in 329 with 1 to 50; 17 gave the reaction only with 1 to 10 or 1 to 25, while in 2 a weak reaction could only be obtained with a dilution of 1 to 5, and in 2 no agglutination was present during any period of the disease. One hundred and fifty-one cases suffering from various other diseases, such as tuberculosis, croupous pneumonia, bronchopneumonia, influenza, scarlet fever, rheumatism, cerebrospinal meningitis, pyemia, enteritis and infectious diseases of the urinary organs, were also examined with the following results: The Widal was positive 1 to 25 in 4, positive 1 to 10 in 25, and negative 1 to 10 in 122. Of the first four, three died of acute miliary tuberculosis, calculous pyelitis and tuberculous meningitis, respectively, the fourth, suffering from pleuritis probably tuberculous in nature, recovered. Sixty-one healthy persons who never had gone through a typhoid were also investigated. One gave a positive reaction 1 to 25, 8 positive 1 to 10, and 52 negative 1 to 10. It is necessary to carry on the reaction at all times under precisely the same conditions (1) by using the same growth of bacilli, (2) by having the broth of a definite composition, (3) by employing the same temperature and growths of the same age, usually twenty hours. In all cases the slide was set aside for two hours at room-temperature before examined. The earliest appearance of the reaction with relation to the duration of the typhoid proved to be an entirely inconstant factor, though in the majority of cases it was present by the end of the first or beginning of the second week. Two hun-

dred and ninety cases tested in this direction gave in the first week 138, in the second 111, in the third 30, and in the fourth 11. These figures are not, however, very reliable, since it often is difficult to place definitely the beginning of the disease from the history of the patient and since many patients do not present themselves for a serum reaction until already well advanced in their disease. Rarely a reaction is obtained only during the relapse. There is no definite relation between absence or presence of reaction on the one hand and probability of relapse on the other, nor between strength of agglutination and severity of disease, which makes the reaction valueless from a prognostic point of view. With convalescence, the agglutinating power of the blood rapidly diminishes, yet a few cases who were tested one or two years later still gave the reaction in a dilution of 1 to 50 to 1 to 10.

Etiology of Carcinoma.—E. v. LEYDEN (*Zeitschrft f. klin. Med.*, Vol. 43, No. 1 and 2), who strongly adheres to the parasitic theory of cancer, relates how he first saw peculiar bodies in the ascitic fluid of a young girl suffering from ovarian carcinoma. These bodies appeared as large, oval cells which extended pseudopodia in a remarkable manner for from one to two hours, the movements finally ceasing without any subsequent retraction of the processes. Similar bodies were found in pleural exudates of cases of carcinosis, in the fresh juice from carcinoma and melanosarcoma. By accident it was found that a decoction of *Chrondrus crispus* (Irish moss) forms an excellent culture-medium for growing these bodies from small tumor-masses. A number of tumors were then investigated microscopically and in all of them epithelial cells which besides the nucleus contained a number of vacuole-like structures, with central reddish-stained dot, were found. They showed a remarkable resemblance to certain amebæ and could be well distinguished from the granules resulting from degeneration of the cell or its nucleus. The author concludes that in all probability the cancer-parasite is a protozoon and not a yeast. The same subject is treated by ROSWELL PARK (*Buffalo Medical Journal*, July, 1901) who briefly reviews the work done by the Buffalo Laboratory. The arguments he advances in favor of a parasitic etiology are many and well-nigh conclusive. Tumors occur in trees and plants, as well as in the lower animals, which bear a certain resemblance to carcinoma in structure and which are known to be parasitic. The occurrence of metastases, the local infectivity, and, finally, the presence of strange bodies in the cells are highly suggestive. The recent study of the latter has solved the problem. There remains, however, much to be done to investigate the true nature of these micro-organisms, the exact position of which in the animal kingdom is not yet clearly defined.

The Clinical Thermometer as a Medium of Infection.—This subject has recently been investigated by ROSENBERGER (*Proc. of the Phila. Path. Soc.*, May, 1901) who by a series of experiments has shown that the ordinary practice of washing the thermometer in water and subsequently wiping it with a clean towel or keeping in the thermometer case a pledget of cotton moistened with antiseptic solution are insufficient means for its disinfection. Thermometers so treated and subjected to bacteriological examination invariably showed the presence of micro-organisms. As the result of this work he draws the following conclusions: (1) It is possible for the thermometer to be laden with the usual flora of the oral cavity; (2) such bacteria retain their capacity for growth for at least two months; (3) many pathogenic bacteria possess the same capability; (4) each patient should be possessed of a thermometer as his own property, but when this is not possible the thermometer should be thoroughly disinfected before using; (5) the custom prevalent in hospitals of keeping thermometers in disinfecting solutions is to be commended.

Hydrophobia.—Undue importance is undoubtedly attached to many of the startling discoveries of recent years, and this can be readily understood in connection with a disease such as hydrophobia when the popular mind is horrified by the agonizing deaths that are pictured and where so much uncertainty exists in regard to an actual infection. C. W. DULLES (*Med. Rec.*, July 13, 1901) believes that, although the Pasteur treatment is founded upon a scientifically proven basis, the majority of cases which are treated in such institutions are brought there through unwarranted fear and often taken advantage of by the physicians in charge who wish to make the percentage of recoveries as large as possible. Of course, it is impossible to say that a patient, who recovers after being bitten and subsequent treatment without any symptoms of hydrophobia, was or was not really infected, but the enormous increase in the number of cases since the Pasteur method of treatment was instituted leads one to believe that a large percentage were never infected at all. It is somewhat strange that the vast majority of deaths attributed to hydrophobia have followed bites by unsuspected dogs, so that dog-muzzling laws should be made more general and rigid, and the community should have full and constant protection against dog-bites irrespective of questions in regard to hydrophobia.

Books as Carriers of Contagion.—KRAUSZ (*Zeitschr. für Hygiene u. Infectionkrankheiten*, June 18, 1901) has by a series of experiments confirmed the already existing ideas along this line. His investigations were carried on in five different kinds of material, (1) new paper ready for the press, (2) newly printed sheets, (3) newly printed sheets fastened into blocks, but not bound, (4) newly bound books not yet sold, (5) books which had been in use. From

these various sources he cut small strips of paper and under antiseptic precautions introduced them subcutaneously and intraperitoneally into guinea-pigs. Of eleven thus inoculated intraperitoneally three died in forty-eight, fifty-one, and sixty-three hours respectively and showed on autopsy the lesions of purulent peritonitis. All those who died had been inoculated with paper from used books and none of those inoculated with new paper or paper from new unused books were in any way affected. He then inoculated tubes of nutrient bouillon with slips of paper from the above-named sources. Paper from new unused books produced in twenty-four hours very little growth in such bouillon. Paper from old books always showed abundant growth. Guinea-pigs inoculated intraperitoneally with 1 c.c. of a series of such bouillon growths showed the same results as those obtained in his first experiment. Guinea-pigs inoculated intraperitoneally with paper from old books which had been sterilized in the autoclave never showed any effect from such inoculation. Tubercle and typhoid bacilli may remain alive a long time when dried upon paper, the former from twenty to eighty days. The best means of disinfecting books is by means of formaldehyde gas, but when subjected to this they should be so arranged that all the pages are exposed. Books that have been over three months out of use do not need disinfection, as any micro-organisms with which they might have been contaminated would have perished within this time. School-books and books from libraries should be disinfected at regular intervals.

Treatment of Hay-Fever.—In this era of antitoxins it is not surprising that various attempts should be made to immunize patients to diseases which they seem very prone to acquire. H. H. CURTIS (*Med. Rec.*, July 13, 1901) reports the use which he has made of preparations from certain weeds, especially ragweed, and various flowers, in order that by the administration of small doses of this poison the body may develop an immunity to the pollen of those flowers. The fluid extract of ragweed was combined with aromatics and distributed under the name of *Liquor Ambrosia* among a large number of physicians last summer. The reports in a large percentage of cases were most satisfactory, and he believes that the cases which did not respond might have been due to other exciting causes, or that they were given the remedy after the attack had begun. A more thorough investigation is to be made this year.

Cause of Cancer.—A number of propositions in regard to the present status of the carcinoma question are made by N. SENN (*Med. Rec.*, July 13, 1901) and much concise, valuable knowledge is given. Carcinoma is a humor resulting from anatypical proliferation of epithelial cells from a matrix of embryonic cells of congenital or post-natal origin. The law of the legitimate succession of cells holds true in the origin and growth of tumors, both benign and malignant, as well as in the production of normal or inflammatory tissue. The histology and histogenesis of these tumors speak against the parasitic origin. The positive results of implantation and inoculation experiments have so far failed in establishing beyond all doubt the parasitic theory of carcinoma. At present a radical operation is the only rational method of treatment, but, since carcinoma is the result of an erratic, planless cell-growth outside of the range of physiological influences which regulate normal tissue repair, researches should be made to find an agent which will destroy the tumor by causing a degeneration of its parenchyma or which will possess the property of converting embryonic into mature epithelial cells, thus converting a carcinoma into a benign epithelioma.

Diphtheria Bacilli in Noma.—The bacteriological examination of eight cases of noma which have been reported by WALSH (*Proceedings of Phila. Path. Soc.*, June, 1901) shows most interesting facts in regard to the connection of the diphtheria bacillus with this disease. In all of these cases he was able to isolate this bacillus, but only one case showed pure culture of the same. The others showed in addition diplococci and large bacilli, but, as his object was the isolation of the diphtheria bacillus, he did not identify the other micro-organisms found. After reviewing the literature he concludes as follows: (1) True diphtheria bacilli are found in many cases of noma; since this disease is a species of moist gangrene, requiring probably the presence of two micro-organisms, one saprophyte and one parasite, to produce it, it is possible that in those cases where diphtheria bacilli are found they are the causative agents; (2) when pathogenic micro-organisms capable of producing necrosis are found, it is possible that they may be the primary excitant.

Oophoromata and Paroophoritic Cysts.—Malignant tumors in the ovaries of children are histologically distinct from the common forms of cancer or sarcoma and may properly be given the name oophoromata. Their characteristics are that they repeat the connective tissue of the fetal ovary, usually affect both ovaries simultaneously, though not always, rarely occur after puberty, recur locally after removal, may be associated with ovarian dermoids, have a preponderance of cell elements in fetuses and very young children, and toward puberty tend to assume an alveolar arrangement and mimic the structure of cancer. The cysts which arise in the paroophoron are, as a rule, unilocular, and differ from oophoritic cysts in that they do not affect the shape of the ovary until of large size, always burrow between the layers of the mesosalpinx, and are beset in the interior with warts. These warts

are very vascular, bleed freely when handled, and are frequently calcified.

Death Due to Hypertrophy of the Thymus.—While hypertrophy of the thymus, if not arrested, is properly regarded as a fatal disease, TAILLENS (*Revue Médicale*, June 20, 1901) calls attention to the possibility of successful surgical intervention. In cases of sudden death due to cardiac failure there can be no question of treatment, but there is no need to stand idly by and permit a fatal termination in cases in which compression threatens a slower death by asphyxia. Hypertrophy of the thymus has played an important part in numerous medico-legal cases; autopsies have shown this condition to be the cause of death in instances in which poisoning and violence were suspected.

Effects of Yohimbin.—KRAWKOFF (*Klinisch-therap. Woch.*, June 23, 1901) reports the results of the experimental administration of yohimbin in men and dogs. The experiments show a marked fall of blood pressure in dogs, which the author attributes primarily to the action of the alkaloid on the vasomotor center. The hyperemia of the skin, mucous membranes, and genitals which is produced by yohimbin is merely an expression of the action of the drug on the general circulation. This is why yohimbin cannot produce a perfect erection and why it cannot properly be classified as an aphrodisiac. In his experiments on human subjects Krawkoff was unable to obtain the results reported by Mendel. Moreover, symptoms of poisoning were observed to follow the administration of the ordinary dose of 5 millegrams.

Intracerebral Injection of Tetanus Antitoxin.—LETOUX (*La Presse Méd.*, June 29, 1901) reports a case of tetanus following a gunshot wound of the foot. Symptoms developed the day after the injury and ten cubic centimeters of antitoxic serum were promptly injected into each cerebral hemisphere. The symptoms existing at this time continued for several days, but there was no accentuation and in seven days the patient was discharged cured. This is the fourth cure reported by Letoux as the result of intracerebral injections.

Eye Troubles Due to Albuminuria in Pregnancy.—Albuminuric retinitis may occur at any time in pregnancy, but begins especially during the first two months or after the sixth month. It is apt to recur in successive pregnancies. Blindness is rarely caused by the first attack, but each recurrent attack does more damage. In uremic amaurosis there is no immediate visible sign in the retina, but atrophy may ensue. This condition occurs late in pregnancy, usually with other manifestations of eclampsia. It apparently never destroys vision by a first attack. The treatment of both conditions is the treatment of albuminuria and non-use of the eyes, enforced by atrophine and dark glasses. E. W. CLAPP (*Boston Med. and Surg. Jour.*, July 11, 1901) would consider the question of abortion in early albuminuric retinitis of a severe type, especially if hemorrhagic, or if a slight retinitis progresses under treatment; in these cases the life of the child is uncertain anyway and the mother runs grave risks of eclampsia. In cases coming on after the sixth month it is best to wait for other albuminuric symptoms.

Radical Cure of Complete Rectal Prolapse.—The steps of an operation described by JUVARA (*La Presse Méd.*, June 29, 1901) are as follows: Resection of the prolapsed mucous membrane; transverse folding of the muscular wall of the prolapsed portion by a double row of sutures, narrowing of the anal orifice by a U-shaped suture; sewing of the mucous membrane to the anal orifice. The danger to be anticipated is the cutting of the mucous membrane by the tense sutures, with resulting separation of the mucous and cutaneous surfaces and subsequent infection of the exposed area. The operation corresponds substantially to that of Delorme.

Inversion of the Tunica Vaginalis for Hydrocele.—This operation is easy to perform and appears to result in cure of the hydrocele. Many operations have been recorded within the past five years by R. H. GREENE (*Jour. of Cutan. and G.-U. Diseases*, July, 1901) with a history of no unfavorable result as regards suppuration or neuralgia of the testis. In the absence of clinical data extending over a long period of time no conclusions can be drawn as to the effect of the operation in causing atrophy of the testicle.

Congenital Pelvic Malposition of the Kidney.—Pelvic malposition of the kidney is uncommon but important in women. A case reported by DEWIS (*Boston Med. and Surg. Jour.*, July 11, 1901) showed on examination a movable, firm, smooth, notched mass lying behind and to the left of the uterus, as sensitive as the ovaries to palpation. The urine was normal. After five years of clinical treatment for backache, operation was resorted to. Celiotomy revealed a retroperitoneal tumor lying over the promontory of the sacrum, embedded in a soft, thick capsule. After exposure of kidney cortex the incision through the fatty cushion was closed with catgut. The blood-supply of the misplaced kidney could not be made out nor the ureter located. Malposition of the kidney does not seem to interfere with normal function, though it does predispose to complications. There is little aid to diagnosis; the sensitiveness to touch is similar to that of the ovary; when there is malposition there is usually marked lobulation; the "tumor" is always retroperitoneal, with or without mobility. The foremost consideration is avoidance of complications.

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SATURDAY, JULY 20, 1901.

AMERICAN STERILITY.

ONE of the most interesting discussions at the last meeting of the American Medical Association concerned the constantly growing reduction of the birth-rate in this country during recent years and the increasing absolute and relative sterility of American marriages. Dr. George J. Engelmann of Boston read a paper on the subject the statistics of which will be found in our report of the Section on Obstetrics and Diseases of Women of the American Medical Association (MEDICAL NEWS, July 13, 1901, p. 78).

A century ago the sterility of American women was but 2 per cent., the lowest of any population in the civilized world and the average number of children to a marriage was six. At present the national sterility is said to have risen to the alarming figure of 20 per cent. and the average number of children to the marriage is but two. This certainly represents a state of affairs which, if true, deserves serious attention, and all the more so since all the civilized countries are now waking up to the realization that factors are at work for the reduction of population in our advancing civilization that threaten to far more than neutralize the gain in numbers that might be anticipated from sanitary improvements and reduced mortality.

Aside from the mere fact of actual numerical decrease of native inhabitants, a misfortune that already stares France in the face and is not far distant for the United States if present conditions continue to obtain, there are certain ethical considerations that "must give us pause" in this important matter. The conservative editor of a periodical so little sensational as *Harper's Magazine* had very opportunely some words of warning on the subject in the July number. As a side issue in the discussion of modern love and love stories, he speaks of "that revolution through which woman has come to live for herself—for her individual development, rather than for the race." He adds: "If we take a narrow and aristocratic section of contemporary humanity the result seems disastrous. It has been estimated that in fifteen consecutive blocks on upper Fifth Avenue, there are but fifteen children. And, taking a more general view, we can not but consider the denial of motherhood to so many women, whether it be voluntary or involuntary, the saddest tragedy of our modern life."

This is, of course, a pregnant aspect of a great social question. As physicians we are much more concerned with it than might at first sight appear. Undoubtedly there is a tendency in the up-to-date physician to advise too readily against maternity and its attendant cares. It is always a question whether the childless woman or the mother wrapped up in every phase of the health of a single child is really in the end less free from care than her sisters with children and their concomitant duties. Occupation of mind and a definite purpose in life are often the best remedies that can be prescribed for the nervous woman whose time hangs so heavily on her hands that morbid introspection and magnification of symptoms become the burden of existence. While at present the weight of medical influence is exerted toward the limitation of families, it would seem to be safer physically and morally to throw it rather on the other side of the scale so that larger families than are at present the rule would become the mode.

Prophecies are always dangerous things—for the prophet, at least—yet at times they teach the lesson of present tendencies better than any mere review. Mr. H. G. Wells, in a series of articles of forecast called "Anticipations" that have appeared in recent numbers of the English *Fortnightly Review* and the *North American Review*,

lets his prophetic spirit attempt to foreshadow some of the results that may flow from sterile marriages. "Will a generation," he asks, "for whom marriage will no longer be associated with the birth and rearing of children, or with the immediate coöperation and sympathy of husband and wife in common proceedings, retain its present feeling for the extreme sanctity of the permanent marriage bond?" This seems a far cry from the present *laissez aller* conditions. It may even appear too wanting in confidence for the future of the race to anticipate serious ethical demoralization from what is apparently only a little selfish withdrawal from family cares in this generation. Mr. Wells' prophecy becomes more interesting from this standpoint as it proceeds. He foresees even the loss of the present respect for woman and her character if she should continue to shirk her plain duties to the race.

Will the agreeable, unemployed, childless woman, with a high conception of her personal rights, who is spending her husband's earnings or income in some pleasant, discrepant manner—a type of woman there are excellent reasons for anticipating will become more frequent—will she continue to share the honors and privileges of the wife, mother and helper of the old dispensation? And, in particular, will the great gulf that is now fixed by custom between her and the agreeable unmarried lady who is similarly employed remain so inexorably wide? Charity is in the air and why should not charming people meet one another, and are either of the ladies to find the support that will enable them to insist upon the monopoly that conventional sentiment so far as it finds expression concedes them? The danger to them of the theory of equal liberty is evident enough.

These startlingly plain words from non-medical observers are stronger than any protestations that were made at the meeting of the American Medical Association, though there the subject was treated with ungloved hands. The consensus of opinion among candid and unselfish-minded students of the question shows how serious and how urgent are the dangers pointed out. This is not a question to be discussed sensationally and then allowed to drop, because there is no complete practical solution of the problems it involves near at hand. Factors for the simplification of the problem we have at command and they must be employed. The recognition of the dangers ahead is of itself a step in the right direction. Medical influence can accomplish some of the beneficent purposes of avoiding the serious evils and the propaganda of right-minded views in the matter of the limitation of families will help to ward off threatened dangers.

SPATE CHAIRS AND HYGIENE.

OWING to the lull in newspaper news due to Mrs. McKinley's improved health, the dying-out of the smallpox scare, and the cool wave that put a quietus on the death-rate, the columns of our New York dailies have been foaming over with a sentimental fizz of democracy and philanthropy that is swallowed without discrimination by a thirsty public.

The Spate-chair fracas is enlivening the dull monotony of midsummer with its free comedy in Madison Square, and the stay-at-home New Yorkers are grateful for the amusement. But the *Sun* takes the matter seriously. "No, the parks are for the public, undistinguished by their bank accounts," is the solemn fiat. It is "principle" that the *Sun* stands for. Decency, cleanliness, the public health are naught compared with the principle of making no distinction between the tramp and the millionaire in the matter of sitting down.

When it comes to locomotion, the millionaire may run his automobile, the well-to-do man may hire a hansom, the thrifty citizen may pay for a seat in a park carriage, and the poor man may walk; but when it comes to sitting all men must be free and equal, free to make themselves absolutely unbearable to their fellows, and equal to the occasion in disseminating the diseases that one and the other are enduring.

It is a disgrace to our city that the idea of paid chairs is so late in reaching us. It is a well-established fact in cities of older civilization, and the fuss and riots that have attended their establishment make us think of that bygone spirit of certain Western gentlemen whose notion of freedom and equality consisted in defying society to make them put their coats on when they came to the dinner-table.

We wish to sharply remind our fellow citizens who are paying the taxes that the good that is done by establishing breathing-places for the people downtown is just about balanced by the evil that is done by the city's laxity in matters of cleanliness and in just such details as this by which every respectable citizen is exposed to disease in the public parks.

The trained eye of a physician has seen in

Madison Square, within the past year, a man with smallpox stretching himself comfortably along a bench, a dozen men with well-developed cases of barber's itch, ringworm, and other scalp diseases by the score, children with eruptive pustular diseases, and contagions of every kind, to say nothing of the profuse expectoration of tuberculous sputum.

A disinclination to sit on the same bench with a man who is covering his immediate vicinity with tobacco-juice, or with one with filthy social habits, or a third who is sleeping off a night's debauch, undoubtedly shows a haughty spirit of class discrimination which is evidently what the *Sun* intends to rebuke, but we implore this powerful journal to waive for a moment its fundamental principles of democracy, and to seriously consider the fact that the Spate chairs are a long step in advance in matters of comfort and also of health.

A NEW BELLEVUE.

THE fires of criticism have been casting a ruddy glow about this hospital and its management for the past year, and it is to be hoped that we may see the fruition of the plan for a new hospital arise from the ashes of the old. The abandonment of the present Bellevue Hospital buildings and the construction of new and modern buildings have been a dream of the hospital physicians for years. The recent recommendations of the State Board of Charities at its last regular meeting come, then, with special significance. It recommended as follows:

"*Whereas*, The State Board of Charities, having in view the fact that the demands upon Bellevue Hospital are greater than upon any other hospital in this country, and its frequent and thorough inspections having convinced the board that the main buildings of the said hospital are too old and ill adapted to their purposes to be sufficient to meet the proper demands of the service, and being also convinced that the only remedy for present conditions is in a new hospital; it is therefore

"*Resolved*, That the authorities of the city of New York are hereby urged favorably to consider the subject of the erection of a new and modern hospital to take the place of Bellevue as soon as possible. It is further

"*Resolved*, That in the opinion of this board the compensation of attendants and other employees in Bellevue Hospital should be reasonably increased so as to secure the services of competent and satisfactory employees, and that suitable provision should also be made for their care in order that the services of such competent and satisfactory help may be retained."

May the good work go on and the opening of the century see a "new Bellevue," with new and modern buildings, under the control of its new board of managers, which will prove a fitting complement to the medical work of this great city.

OCULAR MOVEMENT AND VISION.

WE are apt to think of the physiology of the eye as almost absolutely settled. However, observations are being constantly made that lead to advances in our knowledge of the visual functions. Even the anatomy of the optic tract is by no means definitely known. Ramon y Cajal, on his visit to this country for the celebration of the decennial anniversary of Clark University, took the histology of the optic tract for the subject of his address. It is evident from his work that the visual apparatus taken as a whole appears more complicated the more we learn of it, and that our knowledge of its details is only just beginning. Not long ago Griff pointed out that even the minute anatomy of the terminal portion of the optic nerve in the retina was not settled. He demonstrated that there are in the retina connecting nerve-fibers which run parallel to the surface in certain of the retinal layers. All the cellular layers of the retina seem to have these connecting fibers, so that stimulation of one or more cells excites nerve impulses in a series of cells. This summation of stimuli produces the effect upon the visual cortex.

The complexity of the visual apparatus thus demonstrated makes it clear that for normal function not only must the eye and, especially, its neural appendages be in good physiological condition, but very definite physical conditions must be fulfilled for the attainment of satisfactory vision. These anatomical considerations may help us to understand the results of a recent set of observations made in the psychological laboratory of Wesleyan University. Prof. Raymond Dodge thinks that he has proven that the eyes when in motion can distinguish nothing in any complex field of vision. In order to see any object at rest the eye must remain motionless looking at some definite part of it for an appreciable length of time. If the eyes move they see noth-

ing for about one-twentieth of a second. Prof. Dodge thinks that this explains the success of those sleight-of-hand tricks in which rapid movements of the fingers are absolutely unseen. This fact also makes it clear why in boxing, fencing, etc., the eyes must be made to dwell upon some comparatively fixed point if they are to give due warning of the movements of an adversary.

Prof. Dodge's observations also throw light upon reading and the manner of its accomplishment which is not by a continuous movement, but by a series of pauses during which not separate letters, but groups of letters are recognized. This serves to encourage the idea now applied in modern teaching that the child should not be first taught its letters, but the significance of groups of letters. The letter is only an artificial word element not correspondent with the true psychologic elements of reading vision. Needless to say, this subject is most important since the question of the use and abuse of the eye muscles and the effect upon the general system of nervous reflexes from the neuromuscular eye mechanism is as yet under discussion. Many an obstinate headache that is often accompanied by digestive disturbance has its origin in this complex apparatus. Light on the matter is most welcome, especially as it is suggestive of an entirely new order of ideas on an old subject.

ECHOES AND NEWS.

NEW YORK.

Smallpox Closes a School.—One of the vacation schools of Brooklyn occupying the building of Primary School No. 88 has been closed by the Department of Health on account of the prevalence of smallpox in the neighborhood.

Removal of Patients from Kings County Hospital.—The State Board of Charities has ordered that the mentally defective and epileptic patients of the Kings County Hospital and Almshouse must be removed to the State Insane Asylums as soon as possible in order to relieve the overcrowded condition of the former institution.

Increased Water Supply for Brooklyn—The danger of the annual water famine in Brooklyn has been very largely averted by the recent heavy rains. The amount of water in the borough reservoirs was increased by 51,965,000 gallons between July 3d and 14th.

Sanitary Conditions at Rockaway Beach, L. I.—The sanitary conditions at Rockaway Beach, L. I., for the past two weeks have been of the worst owing to the lax methods employed by the garbage contractors of that place. Their failure to fulfil their contracts has resulted in the cancellation of the same by the authorities and the extra-allowance of $15,000 to the Department of Highways which will undertake the work.

Disposal of Garbage.—The question of the disposition of the garbage of Manhattan and Brooklyn has not as yet been satisfactorily settled. The bid of the Sanitary Utilization Company, located at Barren Island, which has held the contract for the past six years, has been refused by the Board of Estimate which insists that the contract must run one year instead of five, as was formerly the case.

Long Island College Hospital Appointments.—Dr. Ralph H. Pomeroy has been appointed lecturer on obstetrics, Dr. John O. Polak, lecturer on gynecology and obstetrics, Dr. William F. Campbell, professor of anatomy, to take the place of Dr. W. W. Browning, deceased, Dr. Warren S. Simmons, adjunct professor of anatomy.

Anthrax Prevalent in New York State.—Anthrax has made its appearance among several herds of cattle in the west of New York State at Oneida.

Manhattan Dermatological Society.—A regular meeting was held on Friday evening, June 7th, at the residence of Dr. B. F. Ochs, No. 120 West 120th street, with Dr. Wm. S. Gottheil in the chair.

Dr. R. Abrahams presented a child, seven months of age, with a *congenital nævus* of the left side of the nose near the inner canthus. Treatment by electrolysis was advised. Alcohol injections are dangerous in this locality, but useful for small nævi. Dr. Geyser recommended the use of a positive galvanic gold or platinum needle inserted to the depth of three or four lines and with a current of one and a half to two milliamperes. This produces an adherent clot. Dr. Bleiman preferred a radical surgical operation. Dr. Ochs thinks the platinum needle best and Dr. S. S. Cocks prefers the negative needle. Dr. J. Sobel said alcohol injections cause pain and edema and ulceration about the eye. Electrolysis would benefit the superficial vessels, but there was a bogginess below which would be difficult to cure. Dr. Gottheil spoke of the dangers of thrombosis and embolism from injection. The enormously dilated veins below would cause trouble in treatment. He would advise surgical intervention.

Dr. J. Sobel presented two cases of *ichthyosis* in a boy eleven years of age and a girl aged three. Both were born with normal skin and three months later the present condition appeared. Four other members of the family are similarly affected.

Dr. B. F. Ochs presented a young woman with *psoriasis guttata*, in whom for ten years this condition had recurred every summer and disappeared spontaneously in the fall. Dr.

Gottheil mentioned a case of *psoriasis* in which the attacks were very materially benefited by rest in bed and milk diet.

Dr. Gottheil presented a classical case of *acne necrotica*. In a man about forty-five years of age there appeared since childhood typical lesions at the hair margin, temporal regions and naso-labial fold. Numerous scars were present. The man is otherwise healthy. Treatment at present consists of exposure to the arc-light. Dr. Ochs considers it typical. Drs. Oberndorfer and Sobel spoke highly of white precipitate ointment and mentioned the danger of recurrence in this affection. Dr. Kinch inquired whether sulphide of calcium would not benefit these cases. Dr. Abrahams advises iodide of potassium internally.

Dr. J. Sobel presented a patient with *seborrheal eczema* of the chest, back and abdomen. The lesions were red, scaly and circinate in places. Dr. Bleiman would agree as to the diagnosis although the lesions are not typical. Dr. E. S. Cocks agreed with the diagnosis. The only condition which it resembles is pityriasis rosea and this he excluded. Dr. R. Abrahams considers it herpes tonsurans maculosus et squamosus. The presence of rings speaks against seborrheal eczema. Dr. Gottheil would call it generalized ringworm and erythema multiforme. Dr. Ochs inclines toward a diagnosis of herpes tonsurans, yet there is seborrhea with it. Dr. Oberndorfer remarked that he has seen many cases of seborrheal eczema with annular lesions, many lesions of seborrheal eczema with perfect rings.

Dr. R. Abrahams presented a patient with *lichen planus* of the dorsal surface of the hands and wrists. Drs. Bleiman, Ochs and Oberndorfer said that at present it is difficult to make a diagnosis. Dr. Sobel thought that at present the lesions were not destructive of any affection. The extensor surfaces of the wrists would seem to speak against lichen planus. Dr. Kinch considers it eczema. Dr. Gottheil remarked that in the retrogressive stage an eczema papule may resemble lichen. Dr. Gottheil presented a case for diagnosis. The patient stated that six weeks ago the face became affected. It now presents small papular elevations with sebaceous crusts. On the left hand there is an almost complete circle of papules progressing from the center, on the right hand some staining and old scar tissue. Dr. R. Abrahams considers the affection of the face lupus erythematosus and that of the hand herpes tonsurans. Dr. Kinch said it is suspiciously like a syphilide. Dr. Bleiman considers it a tuberculous process. Dr. Oberndorfer looks upon it as a syphilide. Dr. Ochs thinks it syphilis and Dr. E. S. Cocks lupus or syphilis. Dr. Sobel thought syphilis was to be considered, but that the diagnosis was most likely erythema multiforme. Dr. Gottheil said that the history, the staining, and the face speak for erythema multiforme.

Dr. B. F. Ochs presented his patient with resolving syphilis. Marked improvement had taken place under iodide of potassium and bichloride.

PHILADELPHIA.

Paperhangers Want Walls Scraped.—A committee of the Paperhangers' Union has prepared a circular letter to prominent Philadelphia physicians, asking them to give their views upon the necessity of scraping the walls of houses about to be repapered as a hygenic measure. In the event of favorable replies being received, petitions will be sent to the Board of Health and Councils urging that compulsory legislation be enacted.

Hospital for Braddock, Pa.—It is reported that Mr. Charles M. Schwab, President of the United States Steel Company, will give a hospital, to cost approximately $250,000, to Braddock, Pa. The plot of ground on which the proposed institution will be located is one mile from Duquesne and an equal distance from Homestead and Braddock, and is one of the most desirable in Alleghany County. Car lines will be operated to insure quick transportation to the injured.

New Children's Hospital.—It is reported that the 16-acre tract of land opposite Carnegie Institute in Pittsburg is to be the site of a children's hospital which Mr. H. C. Frick intends to build and endow. The site cost Mr. Frick $950,000.

Free Hospital for Poor Consumptives.—A tract of 215 acres has been purchased in the Blue Mountains near White Haven, Pa., as a site for the proposed sanitorium for poor tuberculous individuals. It varies from 1,500 to 1,800 feet above sea level and is said to be an ideal location. The bill appropriating $110,000 for the erection of the necessary buildings is now before Governor Stone. By the terms of the bill $100,000 will be used for the construction of the hospital buildings, which will be arranged on the cottage plan, and the remaining $10,000 will be used in the treatment of the tuberculous poor in Philadelphia. Each year the State gives about $1,000,000 for the maintenance of free hospitals, but until this year nothing has been done in behalf of the tuberculous poor. It is estimated that 6,000 deaths occur annually in Pennsylvania from this disease and that one-third of the sick poor are tuberculous.

The State Board of Health.—This body held its forty-ninth regular meeting at the Asylum for Chronic Insane near Wernersville on July 11th. Secretary Lee presented a resolution requesting an appropriation of $3,000 from the Emergency Fund for the suppression of smallpox. This was forwarded to the Auditor-General at Harrisburg. It is stated that twenty-four points in the State are affected and that there are fully 2,000 cases in Pennsylvania at present. The sanitary con-

dition of the United Brethren camp-meeting grounds at Mt. Gretna was condemned as bad and the officials notified that their resolution of last year must be obeyed. Dr. Samuel T. Davis of Lancaster was unanimously re-elected president of the board and Dr. E. G. Madson of Pittsburg was appointed bacteriologist for Western Pennsylvania.

To Suppress Smallpox.—The residents of Ashland are thoroughly alarmed over the spread of smallpox in that vicinity. At a special meeting of the Borough Council recently, $1,000 was appropriated to stamp out the disease. Reports from Pittsburg are more favorable. At present ten patients are in the City Hospital and of these six will be discharged in a week. The others are not dangerously ill. The free vaccination of the poor continues, as usual, three days a week.

Hospital Protests Appropriation Cut.—With an authorized capacity of 1,710, the State Hospital for the Insane at Norristown, Pa., is accommodating 2,138 patients, and on this excess of population over space is based a vigorous protest against the Governor's proposed cut in the $128,500 appropriated by the Legislature to this institution. The proposed building for nurses and attendants, it is urged, are necesary from a humane standpoint, patients and their caretakers suffering from the present inadequate facilities. The two buildings desired for the employees would each accommodate 150, whose removal from the wards, it is maintained, would provide quarters for practically all of the 428 patients in excess of the authorized capacity, nearly all of whom are now sleeping in the halls.

Alleged Malpractitioner Held.—Coroner Dugan recently committed Mrs. Elizabeth Geverand to prison on the charge of causing the death of Mary Sullivan, aged twenty-nine years, by criminal malpractice. The autopsy showed that death was from peritonitis following injuries.

CHICAGO.

Dean of Northwestern University Medical School.—Owing to the illness of Dr. Frank S. Johnson, Dr. N. S. Davis, Jr., succeeds him as Dean of the College. Dr. Davis was formerly the Secretary of the College. Dr. Davis' position will be filled by Dr. Arthur R. Edwards. Dr. Edwards has long been actively connected with the College.

Hospital-License Law Valid.—Assistant Corporation Counsel Arthur has rendered an opinion in which the Corporation Counsel concurs, that the hospital-license law now in vogue, that law under which Health Commissioner Reynolds has cited Dr. John Alexander Dowie to appear in court, is a good and valid ordinance. Dowie claims Zion is not a hospital, and that he is not amenable to the ordinance. It has been decided that Dowie must take out a hospital license.

Organization of Trained Nurses.—Trained nurses of the State have formed a permanent organization, termed the Illinois State Association of Nurses. The primary object of the organization is to secure State legislation looking toward the passage of laws prohibiting the practising of nurses without a diploma granted by a training school.

Delegate to the Tuberculosis Congress in London.—Health Commissioner Reynolds has left for Europe, bearing credentials showing his appointment as delegate to the British Congress of Tuberculosis, to be held in the Queen's Hall, London, July 22d to 26th. Dr. Reynolds will also attend the meeting of the British Medical Association at Cheltenham. Among those who will attend the Tuberculosis Congress from this city are Drs. John A. Robison, W. Byron Coakley, and Willis O. Nance.

Changes in the Medical Department of the Illinois National Guard.—Major G. Frank Lydston, surgeon, and Lieutenant E. N. Elliott, assistant surgeon, assigned to Second Infantry, have tendered their resignations which have been accepted. Dr. B. S. Rogers has been commissioned major and surgeon; Dr. B. McPherson Linwell, captain and assistant surgeon, and Drs. F. W. Jay and F. Gregory Connell have been commissioned first lieutenants and assistant surgeons, and assigned to the Second Infantry.

Northwestern University Medical School Alumni Association.—The annual meeting of this Association was held recently. Dr. William A. Mann of Chicago was elected president, and Dr. Henry B. Hemenway of Evanston, secretary.

Formaline in Hospital Milk.—It is reported that poison has been found in the milk furnished the patients in the County Hospital. Samples submitted to the city chemist upon analysis have been shown to contain quantities of formaline sufficient to cause or hasten the death of sick persons. Patients had complained of the milk, and declared it tasted "funny." Warden Daniel D. Healy agreed with them, and promptly had samples sent to the city laboratory. The report rendered by the city chemist condemns the milk for all uses, and leaves the venders of it liable to prosecution by the Health Department.

GENERAL.

Opportunity for Young Doctors.—The recent appointment of forty-five assistant surgeons in the army leaves upward of eighty vacancies in that grade yet to be filled. The large increase in the number of medical officers provided for in the reorganization of the army present opportunities to an extent never heretofore afforded for young physicians to enter the military service. Previous service is not a prerequisite to candidacy, physicians from civil life having an equal chance for appoint-

ment with those who have been or are now in service. Examinations will be resumed in Washington early in September next. For information regarding the service see the MEDICAL NEWS of April 27, 1901.

Another Fraud.—We are indebted to the editor of *Success* for the following warning: A man, calling himself "R. G. Stearns," is swindling physicians in various cities, through offering them a clubbing combination of from eight to twelve magazines and charging therefor $4 or $5. During the month of April he operated in New Orleans, La., Memphis, Tenn., Louisville and Lexington, Ky., and in the first part of May was in Detroit, Mich. So far as we have learned he has worked entirely among doctors and dentists. His method of working is to enter a doctor's reception-room and from a grip which he carries take a number of magazines and display them on the table telling the doctor that he can have this outfit sent him for twelve months for $4. He is described as a smooth talker, twenty-five to thirty years of age, about 5 feet 9 inches, rather slim, weighs about 140 pounds; he has a dark complexion, dark curly mustache, and is a Jew. When in Detroit he wore a light suit of clothes and black derby hat. He uses a receipt which he has had printed with our firm name and address at the top, and a line above the signature reads, "Agent is Authorized to Collect Subscriptions in Advance." He usually includes *Munsey's, Pearson's, McClure's, Review of Reviews, Cosmopolitan, Puck, Judge, Black Cat, Woman's Home Companion,* etc., etc. As he is liable to visit your city, we would suggest that you notify your friends in regard to his methods, and this may probably lead to his apprehension.

Plague Ravages in Egypt.—The United States consular representative at Cairo has informed the State Department that the bubonic plague which prevails in many of the towns of Egypt is of a virulent and destructive type, and on account of its rapid development and the exceptionally high rate of mortality, general apprehension and alarm prevail throughout the country. During the week preceding June 19th, there were twenty-three cases reported, twenty-one of which were at Seagazig and two at Minieh. Sixteen cases were admitted to the hospital and five were found dead outside of the hospital at the former place. Of those admitted to the hospital six died.

Fraud Order Against the Magnetic Healing Institute of Battle Creek, Mich.—Postmaster-General Smith has issued a fraud order against J. E. Batdorf & Co., otherwise known as the Magnetic Healing Institute of Battle Creek, Mich. The "institute" advertised that to any one sending "a lock of hair, with age and sex, including four cents postage," they would send a diagnosis of any or all diseases which the patron might have. To those sending the required lock of hair and postage, the concern sent an appalling list of diseases which the owner of the hair was asserted to be afflicted with, and a price list of medicines to suit the various ailments. To those wishing to be cured by the month, the institute was willing to give special rates. A post-office inspector, a remarkably perfect man physicially, filled in one of the institute's blanks, enclosed a lock of hair and four cents, and was informed by return mail that he was afflicted with eleven malignant diseases in various stages. The medicines sent by the institute were claimed by patients to have been worthless. The Postmaster-General, considering that the institute was not conforming strictly to the spirit or letter of the postal regulations, denied Dr. Batdorf the use of the mails. A more rigorous application of this ruling would rid this country of hundreds of other such imposters.

Enno Sander Prize.—The Enno Sander Prize has for 1901-1902 been generously increased by its founder to consist of a gold medal, valued at one hundred dollars, and one hundred dollars in cash. The subject for this year is "The Most Practicable Organization for the Medical Department of the United States Army in Active Service."

1. Competition is open to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States.

2. The prize will be awarded upon the recommendation of a Board of Award selected by the Executive Committee. The Board will determine upon the essay to which the prize shall be awarded, and will also recommend such of the other papers submitted, as it may see fit, for honorable mention.

3. In fixing the precedence of the essay submitted, the Board will take into consideration — primarily — originality, comprehensiveness and the practicability and utility of the opinions advanced, and—secondarily—literary character.

4. Essays will consist of not less than ten thousand, nor more than twenty thousand words, exclusive of tables.

5. Each competitor will send three typewritten copies of his essay in a sealed envelope to the Secretary of the Association, so as to reach that officer on or before February 28, 1902.

6. The essay shall contain nothing to indicate the identity of the author. Each one however will be authenticated by a nom de plume, a copy of which shall, at the same time as the essay, be transmitted to the Secretary in a sealed envelope together with the author's name, rank and address.

7. The envelope containing the name of the successful competitor will be publicly opened at the next succeeding annual meeting of the Association, and the prize thereupon awarded.

8. The successful essay becomes the property of the Association of Military Surgeons of the United States, and will appear in its publications.

Board of Award, 1901-1902.—Honorable WILLIAM CARY SANGER, *Assistant Secretary of War;* Brigadier General GEORGE MILLER STERNBERG, *Surgeon-General U. S. Army,* and a distinguished officer of the line to be announced later. JAMES EVELYN PILCHER, *Secretary,* Carlisle, Pa.

Obituary.—Dr. George H. McMurray died of diabetes in Glens Falls, N. Y., on Friday at the age of thirty-six years. He was educated at Fort Edward Collegiate Institute and the Albany Medical College, and at the time of his death was a member and the secretary of the Pension Examining Board which meets in Glens Falls.

Dr. James Marvin, at one time Chancellor of the University of Kansas and later Superintendent of the Haskell Industrial Indian School, died at Lawrence, Kan., Tuesday. He had been an invalid for years.

Dr. John F. Trenchard, a former well-known physician of Philadelphia, and at one time a member of the City Council, died at Fairton, N. J., July 16th, aged eighty-one years.

CORRESPONDENCE.

MEDICAL NOTES FROM THE PAN-AMERICAN EXPOSITION.

[From Our Special Correspondent.]

THE Medical Bureau of the Pan-American Exposition was established last August, and from that time until the present writing, June 30th, 1,950 cases have been treated by the staff. The hospital, which is situated near the West Amherst Street gate, is a small grey building, containing three wards which will accommodate about thirty patients, an operating-room and surgery, besides a small dispensary, and rooms for the resident staff nurses. The variety of cases treated has been considerable, including electric burns, many fractures resulting from falls, tuberculosis among the Indians, measles among the Esquimaux, and pneumonia among many of the Midway people who arrived from the tropics during the cold weather.

Two births have been recorded on the Exposition register, one at the Indian Congress and the other at the Philippine Village. The young Indian, christened Pan Anna by Governor Roosevelt, is a pure-blooded Navajo, and her birth was conducted in the true Indian fashion. A nest of hay was placed near the center of the tent, over which was spread a sheep-skin, wool side down, and above this, from the ridge pole of the tent, hung a rope. No method of antisepsis was used, but, as the pains became severe, the mother assumed a squatting position over the hay nest, holding to the rope above her head. Back of her, with arms around her and making pressure over the abdomen, was an old squaw, the *accoucheuse* of the tribe. When the doctor arrived the os was well dilated, but the bag of waters had not ruptured. Soon after a severe pain ruptured the membrane, and during the following pain the child was born, the waters flowing into the skin above mentioned. The usual custom is not to cut the cord until after the placenta has been expressed.

Another feature of interest to people in general, and doctors in particular, is the infant incubator. To a doctor perhaps the most interesting part is their method of feeding the prematurely newborn. Some infants when first brought from the mother are incapable of suckling. They gag when milk is poured into the mouth and vomit from irritation when a nasal catheter is used. Dr. Coney, who is in charge of the babies, uses a nasal feeding spoon for these children. The spoon is made by bending the edges of an ordinary spoon to form a nozzle which will allow but one drop at a time to escape. One six-and-one-half-month-old baby was brought in when five days old, weighing two pounds, eight ounces, and having a temperature of 93.4° F. A five-minute bath at a temperature of 110° F. roused the child's body heat to 98° F. Mother's milk, containing one or two drops of brandy, was fed to the child by the nasal spoon and in three days it was able to suckle. It now weighs five pounds, two ounces, and is three weeks old.

The present Staff is composed of the following: Dr. Roswell Park, Director; Dr. Vertner Kenerson, Deputy Director; Drs. Alfred Zittle, Alex Allen and Edward C. Mann, Internes.

THE METHODS OF MEDICAL DIRECTORS OF INSURANCE COMPANIES.

To the Editor of the MEDICAL NEWS:

DEAR SIR: When I suggested to you the desirability of writing to the insurance companies asking the medical directors what course they proposed to pursue concerning the insurance of Christian Scientists, I warned you that the chances were against your receiving many answers to your letters. What I said was based upon my own experience, which I now beg leave to give in detail.

Being anxious to verify the oft-repeated assertion that Jews live longer than other persons, I wrote to a number of medical directors of important life insurance companies asking them for any information they might have concerning the comparative longevity of Jews and non-Jews. My recollection is that I received only four answers. In no other branch of commence is it customary to ignore polite letters asking reasonable questions, and the policy of so-doing appears to me to reflect upon the business capacity of the gentlemen who adopt this unusual procedure.

Two of the answers which did reach me throw some light upon the scientific attainments of those who pose as experts upon the

technical aspects of life insurance. My communication, addressed to the medical department of one of the great companies, was forwarded to a general agent, who favored me with the following ludicrous reply to a scientific question:

"I regret that we are unable to furnish you with any statistics relative to the longevity of Jews and non-Jews. The writer has recently seen a statement to the effect that a greater longevity does prevail among the Jews than the Gentiles; but is unable at this time to advise you where he got the information."

The second answer to which I have referred informed me that an insurance company could not ask an applicant about his religion, and on that ground statistics of Jewish longevity could not be furnished. Anybody who supposes that Judaism is merely a religion must be strangely ignorant both of history and of ethnology. Surely no religion, however old, can construct the Jewish face! Surely religion, unaided, could never have produced such marked "biostatic" phenomena as are found among Jews all over the world! Nevertheless, to the medical directors of some companies, all persons born in what was formerly Poland are Poles, and everyone born in Canada is a Canadian, whether a *habitant* or the son of Scotch parents. Unless my powers of observation are seriously at fault, the Polish Jew has very few ethnic characters in common with non-Jewish Poles, and the most important characters of Jews are identical, whether they were born in Russia, England or the United States. The "argument" which I occasionally hear, that "Poles are not classified by religion in death certificates," is worthy of the nursery. For practical purposes, Jews must be regarded either as a race or as a people, and any insurance company that wishes to collect statistics showing whether they are good risks or bad risks need only print the words "Race and Nationality" on its medical examination blank, and then give some simple instructions to its examiners. I am not acquainted with any Jew who is ashamed of his descent, and the number of Jews who would object to being asked an explicit question upon the subject by a life-insurance examiner must be extremely small. As a rule, however, the information will be given voluntarily in reply to the query named above.

Upon the subject of Jewish longevity, I have obtained some valuable facts from foreign companies; but these companies are not making streunous efforts to insure everybody who has one leg outside the grave; they are *not paying* gigantic commissions to agents; but they *are paying* more than $3.00 for medical examinations, even when the amount of the policy is less than one thousand pounds ($5,000). It is safe to say that they have no "lightning" examiners, who boast of their ability to make an examination in less than four minutes. Before leaving this aspect of the case, I should like to mention the following facts: One of the largest companies in the United States has now omitted chest expansion from its examination blank. Another company, not so old and smaller, has printed a table of thirty principal "causes of death," among which I find "apoplexy," "convulsions," and "dropsy." To the statistician, these so-called "causes"—in reality symptoms—are valueless. A third company has published a volume containing its history for the past fifty years, but I have not succeeded in seeing the book. I wrote to the home office asking if I might be allowed to look at a copy. A young gentleman then came to enquire for what purpose I wanted it. I told him. After the lapse of some weeks, he called again and kindly informed me that the book was not visible at present, because the official in Buffalo who owned it had had a fire at his residence! Apparently this copy was the only one obtainable at the time. But why should a work of this kind be published if it is to be kept from the gaze of persons who have some knowledge of vital statistics?

I venture to urge that the medical departments of some life-insurance companies need reforming somewhat badly. As far as business matters are concerned, every courteous letter ought, of course, to be answered. It should not be necessary to mention this. As to scientific subjects, the life-insurance director has a great deal to do with statistics and with questions of heredity—departments of knowledge which are not taught in medical colleges. I can assert without fear of contradiction by any competent person that physicians, as a rule, are not even familiar with the terminology used by statisticians and by those biologists who make a study of the problems of heredity. That the existing system of managing the medical part of some companies is very defective is shown by an article in the *Buffalo Medical Journal* for January of this year, the title of which is "The Importance of the Position of Medical Examiner for Life Insurance." The author is Dr. Frank M. Maloney of Rochester, N. Y. He says: "It is a sad commentary on the ability and honesty of our profession when one company divides its insurance into two classes, as an experiment, keeping and noting the record of those examined and those unexamined, to find that after a certain number of years the mortality of those unexamined was less than that of the examined. . . ."

Although I know nothing of medicine, I cannot refrain from asking how the medical department of the company to which Dr. Maloney refers has justified its existence.

As to Christian Scientists, it is quite obvious that if a man has no regular medical attendant,

or does not know when he last needed the services of a physician, or cannot give the name of the practitioner who last prescribed for him, that man ought to be rejected by all mutual life-insurance companies, for the very good reason that the acceptance of persons who cannot give this information is injurious to the interests of the policy holders.

I dissent from the expression "a good healthy Christian Scientist" in your editorial of June 1st. No doubt there are some "healers" who are physically healthy, and are merely charlatans of a pronounced type. But most Christian Scientists are mattoids, who are quite often the personification of *mens infirma in corpore infirmo.*

LAWRENCE IRWELL, M.A., B.C.L.

Buffalo, N. Y., July 5, 1901.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, July 6, 1901.

THE REFORM OF THE ARMY MEDICAL SERVICE—APPOINTMENT OF A COMMITTEE OF EXPERTS—MR. BURDETT-COUTTS AND HIS ABORTIVE OBJECTION—SOME PERSONAL APPRECIATIONS—THE NEW CORONER FOR THE CITY OF LONDON.

IN the House of Commons on June 27th Mr. Brodrick, the Secretary of State for War, announced that a committee of experts had been appointed to consider a scheme drawn up by him for the future organization of the medical service of the Army. This Committee consists of Dr. Howard H. Tooth, physician to St. Bartholomew's Hospital; Mr. George H. Makins, surgeon to St. Thomas's Hospital; Mr. Alfred D. Fripp, assistant surgeon to Guy's Hospital; Sir Frederick Treves, formerly surgeon to the London Hospital; Professor Alexander Ogston, of Aberdeen, as representing Scotland; Lieutenant Colonel Keogh of the Royal Army Medical Corps as representing Ireland; Dr. E. C. Perry, physician to and medical superintendent of Guy's Hospital; Surgeon-General Hooper, President of the Medical Board, India Office; and two officers to be named by the Commander-in-Chief to represent the Army. The Secretary of the Committee will be Major H. E. R. James of the Royal Army Medical Corps, and the War Minister will himself officiate as Chairman. In reply to questions Mr. Brodrick stated that he did not propose that the deliberations of the Committee should be hurried as he wished to put the Corps on a permanently good footing. The irrepressible Mr. Burdett-Coutts, who takes everything relating to the medical service as his own special province, attempted to raise an objection to the inclusion of Sir Frederick Treves in the Committee and was promptly snuffed out by the Speaker who ruled that any comment on the names of the persons selected to act on the Committee would be out of order. Doubtless what Mr. Burdett-Coutts wished to do was to repeat a charge against Treves which is as meaningless as a parrot cry and as irritating by what Falstaff would call its "damnable iteration." When Treves and MacCormac returned laden with laurels from their three or four months' trip to South Africa, they were entertained at a big dinner at the Reform Club with Lord Rosebery in the Chair. At that time the devastating epidemic of typhoid fever at Bloemfontein, which brought such an avalanche of criticism on the medical service, had not broken out, and the Army Medical Corps had worked more efficiently than any other branch of the Army. Treves bore emphatic testimony to its good work, speaking of what he had actually seen. Naturally he said nothing about misfortunes which were then still in the womb of time. For this lack of the prophetic faculty Treves has been denounced with childish persistency by Burdett-Coutts as if he had borne false witness as to the state of things in South Africa.

The Committee is a fairly strong one, though the amateur war-surgeon element is perhaps too predominent. Treves himself is known to have views on the subject of army medical reform, for not long ago he gave them to the world in our leading monthly magazine, the *Nineteenth Century and After.* He was also a member of a committee of the British Medical Association appointed to draw up a scheme of reform, but he refused to sign the report on the ground that he did not approve of its suggestions. As the Committee had taken many of its principal suggestions from his article, they were naturally not a little surprised at this repudiation. It was clear, however, that Treves wished to cut himself adrift from them and paddle his own canoe, his motive obviously being to leave himself free to accept an invitation to act as adviser to the Government. Dr. Tooth—who is probably a great man, for has it not been said that the world knows nothing of its greatest men?—has, it may be surmised, been selected because he saw much of the typhoid epidemic and has thus become, almost *malgré lui*, an authority on war sanitation. Mr. Makins is an amiable man and a good surgeon who was lucky enough early in his career to find a protector in Sir William MacCormac; by clinging to the ample coat-tails of that star-spangled Knight of the Scalpel he has risen to a height of most respectable mediocrity where he is popular because he excites no envy. As applied to the medical profession the counsel of the Wise Man, "Beware when all men speak well of thee," may be taken to mean that a man who has no detractors is not thought to be worth disparagement. Mr. Fripp is a young man who has hitherto been the spoilt child of fortune. While in a provincial town doing duty for a general practitioner he was called in to heal a scion of royalty who had received a poisoned wound from Cupid's dart. So successfully did the surgeon minister both to the body and the mind of his illustrious patient that he became a favorite not only with the princeling, but with his exalted parents. When a year or two ago the Prince of

Wales—now *Die gratiâ* King and Defender of the Faith—suffered a fracture of his patella, the faithful Fripp was in attendance and helped MacCormac to do nothing—a method of treatment which they carried out with great skill. Then he went to the war, and while in South Africa contrived to keep the world at home fully informed as to his doings. Fripp may be trusted to go far, for, to paraphrase Pope's phrase about Arbuthnot, he knows his trade as well as his art. The mention of Arbuthnot, by the way, recalls the fact that Queen Anne's famous physician likewise owed to an accident his first start towards professional success. He happened to be passing when a Royal Duke broke his leg, and took at its turn the tide that led to fortune. Such accidents, however, can profit only those who deserve to be favorites of Fortune. Professor Ogston is a surgeon of the highest reputation. He went out to South Africa at his own expense and went about in the capacity of what his countryman Robert Burns described as "a chiel takin' notes." At the annual meeting of the British Medical Association, held in Portsmouth a few years ago, Ogston delivered an address which gave mortal offense by its outspoken frankness of criticism to the medical officers of the Army and Navy. He expressed the opinion that, owing partly to the want of opportunities of practice and partly to the cheese-paring policy of the Government which would not grant them leave to refurnish their knowledge and skill by post-graduate study, they were not up to the level of their brethren in civil life. He said nothing but what was true, but naturally the truth was unpalatable. Ogston's selection will probably be resented by the Army Medical Corps, but impartial outsiders who know the facts of the case regard him as the strongest man in the Committee. Lieutenant-Colonel Keogh is said to be a level-headed man, but such reputation as he has is purely departmental. Dr. Perry is an able man who has proved himself a first-rate administrator at Guy's Hospital; but he can have no personal knowledge of the special problems involved in the reform of the medical service of the Army. Surgeon-General Hooper's military experience has been gained wholly in connection with the Indian Medical Service which is an altogether distinct branch.

On the whole the Committee, if it might have been better, might have been a good deal worse. It is something to be thankful for that there is to be a Committee at all, for there appeared to be some reason to fear that the Secretary of State, whom no one could justly accuse of want of confidence in himself, would attempt the reform of the service without the help of any one. As it is he does not ask the Committee to draft a scheme, but to consider a scheme which he has evolved from his inner consciousness. It is said that the fundamental principle of his scheme is to have the medical supervision of the troops on home stations carried out by civilian practitioners at contract rates, and have a small medical corps for foreign service. If this is true, it is to be hoped that the experts may be able to convince him that the plan is unworkable. Civilians have no notion of military discipline and do not care to be instructed in its mysteries. On the other hand, no man would consent to expatriation for the best years of his life—and this would be the fate of an officer entering a corps employed only for foreign service—without a much more liberal scale of pay than the Government is likely to offer.

Dr. F. J. Waldo has just been elected Coroner for the City of London. He is a graduate of Cambridge and a pupil of Koch. As Medical Officer for the Borough of Southwark he was strenuous in his efforts for the hygienic reform of bakehouses and for the sanitary control of night-shelters. In connection with the latter point, he incurred the anathemas of the Salvation Army by his unsparing exposure of their neglect, not only of sanitary requirements, but of ordinary cleanliness. It is noteworthy that among eighteen candidates for the coronership the three selected were all members of the medical profession. Yet till Thomas Wakley, the founder and first editor of the *Lancet*, won by popular suffrage the post of Coroner for Middlesex, that office was regarded as an appanage of the legal profession.

TRANSACTIONS OF FOREIGN SOCIETIES.

French.

ELEMENTS OF TYPHOID SERUM—TUBERCULOUS CEREBELLAR TUMOR—OLD PLEURISY AND EMPYEMA—INTENSIVE SERUMTHERAPY IN DIPHTHERIA.

M. WIDAL, at the Société Médicale des Hôpitaux, June 14, 1901, read a paper on the existence of *sensibilisatrice* in the blood-serum of typhoid patients, and said that the researches of M. Bordet have shown that the bactericide and cytolytic properties of the specific serums are due to the combination of two substances or elements. The first of these factors is called *alexine;* it exists in the serum of normal adults and may be destroyed by a temperature of 56° C., and acts itself for the destruction of the germs. The other substance is *sensibilisatrice;* it is alone a specific product, occurs in the blood of vaccinated individuals and serves to promote the sensitiveness of the germs to alexine. For establishing the existence of this element, sensibilisatrice in antimicrobe serums, M. Bordet made sole use of this peculiar property which it possesses of causing the organisms to absorb the destructive alexine. Unlike alexine, he found that sensibiliatrice is not destroyed by a temperature of 56° C. Now, if one works up together a normal serum, which has never been heated, with an isotonic emulsion of typhoid fever bacilli and with a serum of vaccinated guinea-pigs, previously raised to 56° C., the bacilli thus rendered more sensitive will absorb the alexine or destruc-

tive element which will disappear from the medium. If now to the above mixture, after a lapse of five hours, one adds a certain quantity of red blood-cells rendered sensitive by having been acted upon by a specific serum, similarly heated to 56° C., hemolysis will not occur. The explanation of this phenomenon is that the alexine of the serum, which in the first mixture had not been heated and which would determine the hemolysis, has been entirely and fixedly absorbed by the typhoid bacilli in the first experiment. If, on the contrary, this first mixture had been made with a non-typhoid serum, consequently not containing any specific sensibilisatrice, the alexine would not have been fixed by the non-sensitive bacilli and left free would have been active in producing the hemolysis of the red blood-cells. M. Bordet and M. Gengou have found that the serum from two convalescents from typhoid fever hindered hemolysis and therefore contained sensibilisatrice. M. Widal with M. Le Sourd have endeavored to make the same experiments with typhoid patients during the invasion and course of the disease. In ten dothienterics they found the phenomenon in the course of the disease, in three as early as the ninth day, but in none was it possible to establish the presence of the substance at any earlier stage of the malady. The control experiments which they carried out with the blood-serum of forty patients afflicted with tuberculosis, erysipelas, gastric disorders, angina or other cardiac affections have given only negative results. The bacilli typhosi in these tests did not fix the alexine and the red blood-cells underwent hemolysis.

M. BERGOUIGNON reported in the name of M. HUCHARD and his own the case of a young woman, thirty years old, who manifested during the course of a pulmonary tuberculosis all the symptoms of cerebellar tumor, occipital headache, bilious vomiting, vertigo, titubation, etc., and who died in coma. The autopsy confirmed the diagnosis by revealing a large tuberculous mass in the right cerebellar hemisphere and in both cerebral hemispheres. The pia mater was covered by numberless small tubercular nodes and the two lungs were nearly destroyed.

M. PIERRE MERKLEN in the discussion said that the syndrome of cerebellar disease is often reduced to cephalalgia, but the characteristics of it are almost pathognomonic. Its seat is always occipital and its intensity is always augmented by the least effort, because exertion determines an increase in the intracranial pressure and adds to the hydrops of the ventricles, which is originated by the venastasis in the veins of Galen from the pressure of the tumor. The mechanism of this pathogenesis was well shown by an interesting case under his care some years ago. The patient was a young man who suffered from unendurable headache, occipital and increased by the slightest exertion. Its steady increase suggested the wisdom of a palliative trephining of the skull. The pain thereafter grew less, but the scar soon began to bulge and from it was aspirated large quantities of cerebrospinal fluid. Finally, the autopsy showed a cerebral hernia, containing the posterior horn of the lateral ventricle, a large hydrops of both lateral ventricles and a tuberculous tumor of the left cerebellar hemisphere, which, by pressure on the veins of Galen, had caused them to dilate and the lateral ventricles to fill. The same clinical history obtained in another case, but at the operation a cyst was evacuated and relief obtained.

M. TRIBOULET disputed the statement that cephalalgia is always a sign of cerebellar tumor, for he had a child among his patients, who never had any headache, but suffered from persistently recurrent vomiting and life was ended by a series of apoplectiform seizures. At the autopsy a cerebellar tumor was found.

M. GAILLARD found a hydatid cerebellar cyst in a man who had only severe headache, provoked to crises by the least exertion.

M. FAISANS exhibited a medical curiosity in a specimen of the thoracic viscera with the pleura much thickened and converted into a veritable shell, cartilaginous in some places and osseous in many others, containing in its cavity a thick turbid fluid in which all cellular elements had long since ceased to exist. This pleurisy dated back forty years and the patient had died after an operation, thoracentesis, rendered necessary by the displacement of the heart. Later in life the patient had also developed cirrhosis.

M. RENDU asserted that on general principles it is advisable to interfere at an early date with all recent empyemata, but it is always bad practice to do so when the pus is dead, free of all cellular matter and abundant only in cholesterine.

M. BARBIER pronounced the recent epidemic of diphtheria in Paris as unusually severe in that the false membranes not only are extensive, but also are inclined to increase notwithstanding all efforts and serumtherapy to the contrary. Furthermore, after an apparent disappearance, they seemed inclined to recur and to be associated with various disquieting symptoms. Consequently he has been practising what should be called an intensive serumtherapy, with M. Loblígeois, consisting in repeated injections of serum just as often as the indications called for, even until the patient had received 80, 100 or even 140 cubic centimeters of the remedy. A very special indication for this vigorous treatment is the existence of a tracheobronchitic complication. Further, in order to prevent diphtheritic paralysis, it is necessary to make the injections at the very first sign of the symptoms which always forerun paralysis.

Gonorrheal Arthritis.—Among the many remedies that have been tried in this disease, Toupet, Bourdillon, and others find that calomel injected into the muscles about the joint is as effective as any. They inject gm. 0.03 (gr. ½) every two to four days, the slight pain not causing any complaint.—M. THOMAS in *Le Mois Thérapeutique*, June 30, 1901.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF RUSH COLLEGE.

Regular Monthly Meeting, Held in Chicago, April 1, 1901.

Mediastinal Tumor.—Prof. Frank Billings presented this paper. The patient John J., age thirty-nine years, married, a laborer, presented himself January 23, 1901. The family history was negative. Previous health was good during his whole life, excepting an attack of bilious fever when twelve years of age. He uses alcoholic drinks very moderately; uses tobacco moderately, and denies venereal disease. A year and a half ago the present illness began with sharp lacinating pain in the right upper chest. This continued steadily, growing gradually worse until about three months ago, when he commenced to have a sharp ache in the left upper chest. This was aggravated by exertion and was especially bad at night. It was accompanied by radiating pain in the left shoulder and down the inner side of the arm to the elbow. The pain is worse when lying down and upon first moving about in the morning, but grows somewhat better after a little exercise. He has a dry cough aggravated by exercise, and the dyspnea of exertion. The voice has never been changed in quality. The appetite is capricious but digestion fairly good. The bowels are constipated. Patient is six feet in height, weight 135 pounds, a loss of 35 to 40 pounds from the full normal weight. The skin is sallow and muddy. The general appearance is one of cachexia. The eyes are negative. The larynx is negative. The superficial veins in the left pectoral region are dilated. Expansion of the chest is limited on both sides and is apparently due to want of muscular power. The respirations are rather rapid and shallow. The apex beat of the heart is visible and palpable in the sixth interspace in the nipple line. Dulness extends from the right sternal border at the top of the second rib to one centimeter outside the left nipple and upward on the left side to the third rib. No throbbing of the chest can be felt. At the apex of the heart a soft systolic murmur is transmitted downward into the seventh interspace and in the axillary line. No murmurs are heard at the base of the heart nor behind. The pulmonic and aortic second sounds are equal and not accentuated. The radial pulses are equal and synchronous. The carotids are equal and synchronous. The pulse is 96 per minute and occasionally intermits. The lungs are negative. The abdominal organs are negative. The urine normal chemically and microscopically. The blood shows 4,200,000 red cells, 70 per cent. of hemaglobin and 8,500 white cells.

This patient has been in the Presbyterian Hospital since January 26th and many examinations have confirmed the findings named above. Recently the radial pulses have been unequal, the left the smaller when the patient is sitting or standing, but they appear equal when he is recumbent. With rest in bed he has become more comfortable until now he no longer suffers from pain of any importance in the chest. The physical findings are, however, the same and an X ray photo shows a mass in the mediastinum just above the base of the heart. The diagnosis of mediastinal tumor is based upon the fact that the patient denies venereal disease, has a family of healthy children, his wife has never miscarried, the disease has been slowly progressive associated with loss of considerable weight accompanied with a cachexia. Furthermore, by the fact that in spite of the pressure being great enough to interfere with the circulation in the vein and at a point which must be near the transverse arch of the aorta and therefore near the recurrent laryngeal nerve and blood-vessels of the left side, it has not produced a change in the pupils or larynx or pulse which one would expect to find in an aneurism of the same region. On the other hand, the patient has improved with rest and with moderately large doses of iodide so that there is a possibility of aneurism and the diagnosis of mediastinal tumor is therefore tentative.

Malignant Mediastinal Tumor.—Drs. E. Fletcher Ingals and Otto T. Freer presented the history and pathological specimen of a case of this affection occurring in a man about thirty-five years of age. The first symptoms, consisting of coryza and tickling sensation in the throat, had begun about four months before he came under observation. Dyspnea began about a month later and had steadily increased. At the end of two months there had been some swelling and congestion of the face, and distention of the superficial veins were noted, but there had been no pain. When first seen the patient was strong and well nourished, but the cough was very troublesome and the dyspnea alarming if he lay down for a few minutes. There was dulness on the front of the chest over an area extending from the clavicles to the lower edge of the ribs and laterally about three inches each side of the sternum, with flatness over the lower part of the right chest. The fluoroscope revealed a dark shadow nearly corresponding to, though somewhat larger than, the area of dulness. The respiratory sounds were absent over a large part of the dull area and lower part of the right side but were nearly normal elsewhere. Tracheal râles indicated compression of this tube. The superficial thoracic and abdominal veins were moderately enlarged and upon stripping the superficial epigastric veins the blood was seen to be flowing downward because of obstruction of the superior vena cava. There were a number of slightly enlarged inguinal and cervical glands and the left vocal cord was paralyzed in the cadaveric position. The patient grew steadily worse and died in about two weeks.

Autopsy.—Postmortem revealed a larger anterior mediastinal sarcoma corresponding closely in size to the clinical findings. There were very slight changes within the abdominal cavity. There was a large collection of serum in the right pleura, extensive adhesions of the left pleura and the heart and larger blood vessels together with the trachea were much involved by the tumor mass. The very interesting pathological changes were demonstrated which explained the symptoms that had been observed before death.

Calculi.—Dr. Arthur Dean Bevan presented specimens of salivary, hepatic, pancreatic, renal, cystic calculi and reviewed the points in the etiology, pathology and natural history common to all of them. He also briefly reported the cases from which the specimens had been obtained and stated that all true stones consisted of two sustances of different origin: One, the frame-work of organic material derived from the mucosa of the duct or reservoir in which the stone was formed; the second, the crystallizable substances derived from the secretion of the gland in connection with this duct. He believed that the essential cause of true stone formation in any position was a catarrhal inflammation of the mucosa of mycotic origin.

Salivary Calculus.—In the case of salivary stones in addition to this essential cause, *i. e.*, mycotic infection, there was occasionally found as a nucleus, a foreign body which had worked itself into the ducts of the salivary gland. The germs producing a catarrhal inflammation of the mucosa which led to the development of salivary calculi gained access to the mucosa probably from the mouth through an ascending inflammation. The finding of leptothrix and other germ forms by Klebs and Gallippe in salivary calculi seemed to demonstrate this fact. One could not exclude, however, the possibility of such germs reaching the salivary glands and ducts through the circulation.

Gall-Stones.—In connection with gall-stones, the same etiological factors are present. The germs producing the essential catarrhal inflammation reached the mucosa of the bile-tract by an ascending inflammation from the intestines in some cases; in others probably through the blood carried to the liver. It is difficult to state which route is the more common as the germs usually found in gall-stones, the colon bacillus and the bacillus of typhoid, might reach the bile-tracts by either route. Foreign bodies are occasionally, but very rarely here, the nuclei of stone.

Pancreatic Calculus.—In connection with pancreatic stone, Dr. Bevan stated that the etiological factors were practically the same as in gall-stone formation. He called attention to the difficulty of diagnosing pancreatic stone and to the probability that it was more common than we have heretofore believed, also that it was probably an important factor in acute pancreatitis and fat-necrosis. The development of the surgery of the pancreas within the last few years makes us hopeful that in the near future we shall be able to diagnose and operate successfully for pancreatic calculi. In 1885, when Charles T. Parkes first suggested and planned choledochotomy, it seemed to the surgeons of that day as difficult an undertaking as the removal of a stone from the pancreatic duct seems to us to-day and yet choledochotomy soon earned for itself the position of one of the most successful and brilliant of surgical achievements.

Urinary Calculi.—In demonstrating a number of calculi from the urinary tract, he stated that we had here, probably, again the same etiological moments, viz., a catarrhal inflammation of the mucosa of mycotic origin. There could be no question that the germs producing this inflammation might reach the mucosa either by ascending the urinary tract or might be brought to the kidney or bladder by the blood. He believed the most common germ form here was the gonococcus, which represented the first route, and the bacillus of typhoid and the colon bacillus both probably representing the second.

The natural history and symptom complex are very much the same in all forms of calculi. They may remain for years innocuous without giving evidence of their existence; if they do give evidence of their existence, it is either because mechanically from change of position or increase in size, they interfere with the patency of the duct or reach a point in the duct too small for their accommodation, as in the passage of a stone through the common duct or a stone through the ureter; or more frequently, the cause of symptoms was the occurrence of a fresh infection of the mucosa—this infection favored by the presence of the calculus. The X ray is of great value in determining the presence of urinary calculi whether in the kidney, ureter, bladder or prostate. This means of diagnosing has not as yet been satisfactory in determining the presence of gall-stones excepting in a limited number of cases. Within the last few years much brilliant work has been done in kidney-stone surgery, thanks to this means of diagnosis.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting, Held April 27, 1901.

The Vice-President, William B. Coley, M.D., in the Chair.

Acute Intestinal Obstruction Following Operations for Appendicitis.—This paper was read by Dr. Arthur L. Fiske.

It will appear in a subsequent issue of the MEDICAL NEWS.

The discussion was opened by Dr. Charles L. Gibson, who said that appendiceal troubles and

operations for appendicitis are a common cause of intestinal obstruction. The most frequent cause of acute obstruction of the intestines is the formation of bands beneath which the intestine becomes nipped. Out of one thousand cases of intestinal obstruction collected some time ago by Dr. Gibson, nearly 200 were due to adhesive bands. The frequency with which intestinal obstruction is located in the right iliac region is a sure sign that the adhesions and other pathological conditions which cause the obstruction are due to an antecedent appendicitis. In a certain number of cases, stricture of the rectum is also due to the inflammatory conditions consequent upon appendiceal affections. The inflammatory products gravitate down into the pelvis, especially when the situation of the appendix has been such as to favor this gravitation. The connective tissue formed by the eventual organization of the inflammatory tissue has a tendency to contract, which accounts for its production of intestinal obstruction and also of the narrowing of the lumen of the rectum.

Appendix as Constricting Band.—Dr. Gibson has seen the appendix itself as a constricting band in certain cases of intestinal obstruction and in the literature of the subject this portion of the intestine is mentioned not infrequently as the source of the obstruction. When the tip of the appendix becomes inflamed it is liable to contract attachments to surrounding structures and these prove the source of obstruction later on, when the acute inflammatory condition subsides.

Prophylaxis of Subsequent Intestinal Obstruction.—After operations upon the intestines in which there has been considerable inflammatory exudate thrown out it is advisable to have the function of the intestine recommence as soon as possible after the surgical intervention. For this purpose early free catharsis seems especially indicated. McCosh's injection of concentrated salt solution commends itself as an excellent remedial measure for this purpose. It is Dr. Gibson's custom to inject an ounce of Epsom salts dissolved in as little water as possible just beyond the part of the bowel that has been operated upon. In cases of appendicitis the injection is made through the stump of the appendix. As soon as the patient is able to take medicine by the mouth, calomel is given. The custom of injecting the salt solution in the manner described is a source of great comfort to the surgeon, who realizes that the restoration of the function of the intestine is practically immediate. The habit of doing so also saves the patient a good deal of inconvenience, and improvement after nutrition comes sooner since the patient's stomach is not disturbed by purgative medicines.

Decrease of Intestinal Obstruction.—Dr. John B. Walker said that intestinal obstruction has become more infrequent of late years. There is no doubt that the more careful diagnosis and surgical care of appendicitis has something to do with this. Post-operative intestinal obstruction is rarer than it was, because operations are usually aseptic and much more care is taken not to leave raw surfaces that may prove the origin of adhesions. It must not be forgotten that sometimes intestinal obstruction in its initial stage, before the symptoms have become too severe, will yield to high enemata.

Pressure as Cause of Adhesions.—In one case in Dr. Walker's recent experience the symptoms of intestinal obstruction developed about six days after an operation for appendicitis. There had been a large abscess and a considerable amount of gauze was used for packing. The intestines were thus pressed tightly together and this was doubtless the cause for the formation of adhesions that led to the knuckling of the intestines and consequent occlusion of the canal. The symptoms were not of the severest type and vomiting did not occur, but there was almost constant hiccoughing. Reopening of the abdomen showed that adhesions had been formed between the stump of the appendix and the knuckle of intestine. The adhesive bands that form in these cases are more often the cause of intestinal obstruction than any other pathological condition.

Adhesive Bands after Appendiceal Operations.—Dr. Edward M. Foote said that he had seen a series of autopsies after death from delayed appendix operations, but had never seen any adhesions formed in the appendiceal region. Death in these cases was due to sepsis. Mechanical elements, such as the presence and pressure of gauze, undoubtedly play an important rôle in bringing about the development of adhesions. In recent years, when the technic of appendiceal operations has been made more perfect, the development of such adhesions is much less frequent than it used to be. Covering in all exposed surfaces and not allowing the stump of the appendix itself to remain as a raw surface from which the oozing lymph may easily lead to the formation of adhesions are important precautions.

Acute Obstruction with Gangrene.—Dr. William B. Coley said that he has not seen any cases of intestinal obstruction after appendicitis except this recent one. A boy of ten was operated upon for appendicitis and made a perfectly good recovery. Six months after the appendicitis operation he had an acute attack of intestinal obstruction. He was in the country at the time and had to be operated on under somewhat unfavorable circumstances. The operation was delayed until it was scarcely more than a last resort and the patient's condition was almost hopeless. Three and a half feet of the intestine were found to be gangrenous. The patient's condition was so bad that it was feared that the continuance of the anesthesia and of the exposure of the intestine for a length of time sufficient to perform intestinal anastomosis would surely prove fatal. Both ends of the intestine resected were

brought out to the median line and secured there. The patient made a reasonably good recovery. The end of the intestine from which the intestinal contents came was rather high up in the ileum. As a consequence the patient's nutrition suffered very severely.

Resection and Anastomosis.—Three and one half years after the original enterostomy the patient came under Dr. Coley's treatment in a state of severe emaciation as the result of his intestinal fistula. A radical operation was done, both ends of intestine being resected and the two portions of the severed gut brought together by means of a Murphy button. The operation proved a perfect success, but, though the patient remained for four weeks under careful observation in the hospital and the button was faithfully looked for at home, no trace of it was ever found. Just what has become of it remains a mystery. The patient gained twenty-eight pounds in six weeks and is now in excellent condition and without a symptom from his surgical experience. Dr. Coley is of the opinion that intestinal obstruction will occur less and less frequently, as appendicitis is treated better and earlier, and that post-operative obstruction will be lessened by the thorough removal of all inflammatory products at the time of the operation, that is, as far as is possible, and by taking due precautions not to leave any raw surfaces exposed.

Old Appendicitis in Intestinal Obstruction.—Dr. Arthur L. Fiske said in closing the discussion that Treves thinks most intestinal obstruction is due to bands of connective tissue formed as the result of chronic inflammatory conditions in the neighborhood of the appendix. Other authorities agree with Treves in this matter and there seems no reason to doubt that the better treatment of appendicitis in our day will lead to a reduction in the number of cases of intestinal obstruction that occur. Even when intestinal obstruction does occur after operations for appendicitis, the condition cannot always be considered as due to the operation. It might very well have developed in the ordinary course of the inflammatory process and the operation may indeed have delayed their formation, or rendered their effect upon the intestine less serious. In order to avoid the formation of adhesions at the time of an appendiceal or other intestinal operation, the use of salines in the bowel seems advantageous. Peristalsis is stimulated at once and the intestinal adhesions are broken up early or avoided entirely.

High Enemata in Intestinal Obstruction.—In Dr. Fiske's opinion the use of high enemata when symptoms of real intestinal obstruction have developed is never of avail. In three of his cases they were faithfully employed, but did absolutely no good. In very bad cases they always involve a certain amount of danger. In other cases they mean the loss of precious time. Time is the main element in the prognosis of intestinal obstruction. Changes in the bowel rapidly take place. Once complete obstruction has been established the conditions for good surgery very soon disappear. It is a relic of medical tradition to use high enemata, but it really seems in most cases scarcely wise to make the delay for this unavailing purpose. It is doubtful if the liquid of the high enema can ever be forced beyond the ileocecal valve. In infants, in whose elastic tissues the attempt should succeed if anywhere, Dr. Fiske has often tried to force water by pressure beyond the ileocecal valve, in cases of intestinal invagination, but has always failed. Cases reported in literature show that where pressure is employed rupture of the bowel is apt to take place. Once the diagnosis of intestinal obstruction is made, operation should be done as soon as possible. Where the operation is performed early, the prognosis is reasonably good. Not more than 25 per cent. of patients operated on during the first twenty-four hours of their symptoms of acute intestinal obstruction will be lost. After the first twenty-four hours the mortality doubles.

Post-Appendicitic Obstruction.—Intestinal obstruction which develops after operations for appendicitis seems to be due to collapse of the abscess wall and consequent kinking of the intestine which forms part of the wall. In these cases, as the result of agglutinative processes, owing to the new mechanical conditions established, there is apt to be a sharp angle made in a fold of intestine, and this leads to congestion, stoppage of peristalsis and to complete obstruction. With the first symptoms of intestinal obstruction, careful watch should be kept of the patient, and if the symptoms increase the abdomen should be opened. If this procedure were followed with confidence in every case, the mortality of the operation by intestinal obstruction would be greatly lowered. The bother so far has been that operation for intestinal obstruction is looked upon as a last resort, somewhat as a forlorn hope. This is a legacy from the days when aseptic surgery of the abdominal cavity was unknown, and when a great majority of patients on whom laparotomy was done necessarily perished. The condition that exists and that causes the intestinal obstruction is a very simple one. As a rule, only thin, fibrous bands of adhesions are found, but these are sufficient to bind the intestine down at an acute angle that occludes its lumen. These can be very easily broken up and the lumen re-established after laparotomy.

The Harvard Medical School.—Dr. Edward M. Foote presented a series of statistical details showing the comparative standards of the prominent medical colleges of the country. This table makes it clear that Harvard is retaining her position of pre-eminence among the medical schools of the country in the best sense of that term. Harvard has more profes-

sors and instructors in her medical department, devotes more time to laboratory and clinical work, requires a higher standard for admission to her medical school and demands a more thorough knowledge of medicine for graduation after her course is completed.

CHICAGO PATHOLOGICAL SOCIETY.

Stated Meeting, Held May 13, 1901.

The President, L. Hektoen, M.D., in the chair.

The Cellular Changes in Tuberculous Meningitis.—Dr. I. B. Diamond presented a paper on this subject. Plasma, lymphoid and phagocytic cells form the greater portion of the cell-infiltrations in the vascular and extravascular areas of the leptomeninx in acute tuberculous meningitis. The plasma and lymphoid cells emigrate largely from the lymph-spaces of the arterial adventitia and from the finer capillaries. They proliferate largely by indirect division, a certain number, however, are derived from lymphoid cells. There are two kinds of phagocytes (1) those which proliferate from the endothelial lining of the capillaries and lymph-spaces, and (2) those from the subendothelial intimal connective tissue. The most important of the vascular changes—the tuberculous endarteritis—develops in the following manner: Plasma and lymphoid cells accumulate underneath the endothelium of the intima; later the subendothelial intimal connective tissue cells are found mixed with the former. They proliferate next to the elastic coat, are to a certain degree phagocytic and resemble epithelial cells. They also run together and form giant cells and in this manner characteristic intimal tubercles develop. Changes of the endothelial lining of the arteries occur later, especially when there is caseation or hyaline degeneration of the collection underneath. Of interest is the great production of plasma cells which is analogous to the cell changes described by Councilman in acute interstitial nephritis, while on the other hand, the production of phagocytic cells is analogous to the cell changes described by Mallory as occurring in typhoid fever.

Bubonic Plague.—Dr. Lewellys F. Barker presented gross and microscopic specimens of the buboes and internal organs removed from Chinese dead of plague, in San Francisco. The demonstration was accompanied by a brief description of the pathology and pathogenesis of bubonic plague. In the bubonic form of the disease the lesions in the lymph-glands and surrounding tissues—edema, hemorrhage and necrosis—are very characteristic. The changes in the spleen are more marked in the septicemic form than in the bubonic form. The specimen of spleen under the microscope showed extensive necrosis of the splenic framework and pulp, with wandering in of polymorphonuclear leucocytes. Primary plague pneumonia is distinguished from aspiration pneumonia and from embolic pneumonia occurring as complications of plague. The enormous number of bacilli present, the abundance of blood in the exudate, and the small part played by fibrin, are interesting features. The question of portal of entry was discussed in connection with the various clinical types, and an effort was made to explain the fact that local lesions in the skin and mucous membranes and lymphangitis are rarely present, the first outspoken lesions occurring in the nearest packet of lymph-glands.

Atresia of Follicles.—Dr. Leo Loeb demonstrated microscopic section showing the difference between the atresia of follicles in different stages of maturity; also microscopic sections of two ovaries of a guinea-pig in which all follicles presented the picture of hypertrophy of the epithelium and in which the atresia without exception started by the ingrowth of connective tissue and capillaries into the follicular epithelium. Two slides were demonstrated showing follicles in the process of atresia, each one of which contained two ova. In one of these two follicles both eggs showed progressive changes; in the other follicle, one ovum was unchanged and well preserved; the other ovum was segmented. In a third atretic follicle, of which a slide was shown, in which three ova were present, two of these were unchanged, the third ovum had undergone certain changes, the exact nature of which could not with certainty be determined. Another specimen showed a structure resembling very much a small corpus luteum, in the center of which, however, two successive sections demonstrated the presence of an ovum. At present it must be left undecided, if in this case the ovum of a ruptured follicle was retained and a corpus inteum had formed around it, or if under certain conditions a follicle which had not ruptured previously might in the stage of atresia give rise through hypertrophy to a structure similar to a small corpus luteum.

Perforation of Stomach by Gastrolith.—Dr. Maximilian Herzog presented a gastrolith composed of persimmon seeds which had caused perforation of the stomach and death in a three-year-old boy in the practice of Dr. Cargile of Bentonville, Ark.

BOOK REVIEWS.

ORAL SURGERY. A Text-Book on General Medicine and Surgery as Applied to Dentistry. By SEWART LE ROY MCCURDY, A.M., M.D., Author of "Manual of Orthopedic Surgery"; Professor of Anatomy and Surgery, Pittsburg Dental College, Surgeon P. C. C. and St. L. R. R., etc. By the Calumet Publishing Co., Pittsburg, Pa.

IN looking through this book we have labored

long and faithfully to find something worthy of commendation, but our efforts have been unrewarded. It may be that the volume bears concealed somewhere between its flaming covers a gem that has eluded our search; if so, we apologize most sincerely, but the very difficulty of the undertaking stimulated us in our attempt to unearth some point on which we might hang a little word of praise and we were honestly grieved to find our good intentions frustrated at every turn. It is all too apparent that the book is one of a class that is rapidly increasing in these days, when teaching positions are easy to obtain and unfortunate students are morally coerced into buying a rubbishy compilation masquerading as a text-book simply because it bears on the title page the name of one of the faculty. The present instance offers a most striking example of the deplorable results to which the *furor scribendi* may lead, and the author cannot even justify himself, as did a witty writer of a former century, by saying:

"Ce livre n'est pas long, on le lit dans une heure,
"La plus courte folie est toujours la meilleure."

for he is responsible for over 350 pages of bad writing, bad printing and bad illustration.

A TREATISE ON APPENDICITIS. By GEORGE RYERSON FOWLER, M.D., Professor of Surgery in the New York Polyclinic; Surgeon to the Methodist-Episcopal Hospital, etc. Second Edition, Revised and Enlarged. J. B. Lippincott Company, Philadelphia and London.

APPENDICITIS, ITS PATHOLOGY AND SURGERY. By CHARLES BARRETT LOCKWOOD, F.R.C.S., Assistant Surgeon and Lecturer on Descriptive and Surgical Anatomy in St. Bartholomew's Hospital, etc. The Macmillan Company, New York.

INFLAMMATION of the appendix and surrounding structures has now become one of the commonest ailments the surgeon is called upon to treat and each year the statistics are piling up an increasing rate of morbidity from this cause. The almost meteor-like development of this condition is quite unparalleled in the history of medicine and no other disease has ever sprung to so prominent a place in such a short space of time. The study of the subject is fast verging into a specialty and the appearance in quick succession of numerous monographs is a certain index of the importance it is assuming. Whether we attribute the greater number of cases seen to-day simply to our better understanding of the lesion and, consequently, more accurate diagnosis, or hold with those who contend that, owing to hereditary, developmental and other obscure reasons, the race has actually become more susceptible, it is very evident that no physician is to-day competent to practice who has not given this subject more than passing attention.

The two volumes before us differ rather more radically than is apparent from their titles and, while both are of a very high order of merit and equally deserve the gratitude of the profession as adding to our knowledge in a field where much is still uncertain, we think that the American author will be found more generally useful to the average practitioner. Dr. Fowler's book, already in its second edition, is eminently practical and is full of information, particularly as to diagnosis and treatment, that will be of utmost value even to the accomplished surgeon. The elevated head-and-trunk position, which, we believe, is original with the author, is but one of many similar expedients described by him. It consists in raising the head of the bed twelve to sixteen inches, the patient being kept from slipping down by a pillow tied in place beneath the flexed knees. The object of the maneuver is to favor the gravitation of septic material away from the dangerous areas of absorption in the peritoneum, while the nausea and vomiting also are materially decreased and normal peristalsis favored.

Lockwood approaches the subject rather more as a pathologist and gives the clinical history, the operation and morbid anatomy, the morbid histology and a brief commentary on 83 cases that have come under his observation. Chapters on clinical symptoms, indications for operation, the technic of its performance, and after-treatment are added, but are less complete than in the American book. The nomenclature of the disease has already given rise to many wordy battles and the author enters the lists with a mild but still comprehensive criticism of most of the terms in common use, such as "relapsing," "recurrent," "suppurative," "perforative," and "gangrenous appendicitis," "appendicular colic," "perityphlitis," used as a synonym for appendicitis, etc., which in one sense is perfectly just since it is true that these designations have a purely clinical value and do not indicate definite pathological conditions, for many kinds of appendicitis may end in perforation or relapse, and appendicular colic probably never occurs without some histological lesion, etc. But these terms have been generally accepted by the profession and convey clear impressions to most of us, while the author's proposed substitutes, such as "appendicitis with ulceration of the mucosa and bacterial invasion," "appendicitis with ulceration of the mucosa and perforation," although they correctly define the pathological condition existing, are quite too cumbersome for ordinary use. About fifty microphotographs of sections of appendices are used to illustrate the text, but, while some of them are admirable, for the most part, as is usually the case with such reproductions, they are far less instructive than well-made drawings would be.

We hope that the differences of general scope existing between these two excellent works have been to some extent indicated; both are good, but for the man with a limited library Dr. Fowler's book will undoubtedly prove more satisfactory, while those especially interested will find much that is valuable and worthy of consideration in the work of his English colleague.